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T H E

MARYLAND FARMER:

DEVOTED TO

Agriculture, Horticulture, Rural Economy & Mechanic Arts.

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No. 6.

SHADE AS A FERTILIZER.

More than once we have alluded to the great importance of shading the surface soil by the use of some natural or artificial covering. Everybody knows that where hay or straw is stacked out for some time, or where bushes or weeds have been heaped up for burning and allowed to remain on the field, or where the ground beneath the stacks or heaps has been shaded when next put into crops shows a heavier growth on those spots than on any other part of the field. A short time ago, a Western correspondent of one of the Northern agricultural journals called attention to the fact, as if it were a new discovery. Yet no observing farmer can have failed to have noticed it often, although he may not have understood the philosophy of it. The correspondent in question seems to have been taught by accident the advantage to be derived from shading the soil with refuse straw, and to have subsequently profited by the discovery. He remarks, that "years ago I spread some refuse straw upon a meadow and reaping therefrom an *unlooked for* benefit, I continued the practice subsequently, and always and ever with good results." The benefit to be derived from the same quantity of straw turned under would have been very small indeed. Spread over the surface soil, it checked evaporation by intercepting the rays of the summer sun, it decayed gradually and thus absorbed and retained moisture from the rainfall, and it also returned, as it decayed, some soluble salts to the soil, of which it stood in need. But the chief value of a mulch of this kind lies in its protection of the soil from loss by evaporation, and its beneficial effect on the chemical and electrical action which is always going on beneath a soil, and by which inorganic substances are gradually broken down and rendered soluble. It is this which makes lands newly opened from the virgin forest so rich. The leaves falling from year to year, and decaying gradually on the surface, have covered it with a thick layer of vegetable mould, rich in potash, and have also kept the surface, spongy and open, so that the descending rains could penetrate easily and be

absorbed by the soil. Forest lands, notwithstanding the constant drain which the growing trees make upon the soil, not only never grow poorer, but year by year store up in the soil a greater quantity of fertilizing constituents. It is upon this principle that mulching acts.

The English land owners, in leasing out their farms, stipulate very wisely that a certain proportion of the land—frequently one-third—shall be kept permanently in grass. They have learned by experience that grass lands improve the soil from year to year, by the decaying leaves and the thick heavy turf which is gradually formed. In that moist, cool climate, shade is far less essential to the preservation of the soil than it is with us. Our summers are hot, and our system of cropping is singularly exhaustive. They have no hoed crops worth speaking of, and are compelled to resort to summer fallows to subdue the weeds. Our hoed crops are among the most important of any we cultivate, and south of the Susquehanna River, down through all the regions where the sun pours its most scorching rays, and the soils are of light texture, and the rains most washing, corn and tobacco and cotton are the great staples we cultivate. That the soil so laid bare, and by the constant stirring of it, which is required to bring the crops to perfection, thus turning up from week to week fresh soil for the sun to act upon, should rapidly become exhausted, is a fact which ought to excite no wonder, and which experience fully attests.

The remedy lies in alternating cultivated crops with shade crops—or failing these in mulching—that is, by spreading over the soil refuse straw or corn stalks or dead leaves, and pine shatters from the woods, and covering the entire surface with these rough, fibrous materials to the extent of the ability of the farmer or planter. But the cheaper and better process is to grow clover and grass crops—clover especially—not cutting it, but letting it fall and shade and re-seed the ground. In this case clover, which is allowed to go to seed, does not seriously exhaust the soil, for the roots and stems and leaves and the shade which in falling they give, amply compensate for the drain which the seed makes up-

on the organic and inorganic substances the soil has furnished. Those, however, who object to letting clover run to seed, may turn it under at the time of blossoming, and if the stand has been a heavy one, the renovation of the soil will be greater than by a liberal dressing of manure. But there are soils, too many of them, which even in our latitude, will not grow clover without help. To such, of course, the means of growing clover must be supplied. In the foremost rank of these stands lime—either shell, or stone, and next to lime, marl; the latter frequently contains a notable amount of potash, and in this case its action is almost immediate. The second year after liming a small sprinkling of manure will have a great effect—or, better still, a good quantity of superphosphate, containing also a small percentage of potash and ammonia. One hundred and fifty pounds of such superphosphate applied to a field limed two years previously, will produce a heavy stand of clover on soil that was previously very poor. At the far south, and especially in the cotton States, it is difficult however to grow clover, resort there must be had to the field pea. The latter answers a similar purpose, covers the soil well, and when turned under fertilizes it greatly. But the main considerations in the process of preserving and renovating our soil, are that they shall be kept shaded as much as possible during the summer months. Grass and clover, or pea crops, constitute the most economical means of renovating them, and also of protecting them, through the shade which they give to the soil, and therefore into every system of good farming they ought to enter largely.

How to Eradicate Sassafras Bushes.

George Levy, writing to the daily *American* of this city, gives his mode of destroying this troublesome bush: Many farms are infested with sassafras bushes, and many plans have been adopted for their destruction with little success, the trouble being that when they are grubbed up every small root left then, will the ensuing spring produce a separate shoot, and thus the numbers increase. Thirty years ago a practical farmer, who had seen four-score years, told me that if the bushes are grubbed the day before and the day after the full of the moon in July, and the day before and the day after the full of the moon in August, the small roots left in the ground will never germinate again. After thirty years experience, I am prepared to say to all who are troubled with them, suspend all other work, embrace the opportunity offered during the four days I have named, and in the coming spring you may see one in a thousand; but follow the same course next summer, and you shall see your enemy no more. I speak from experience—I shall leave others to philosophize and theorize upon it.

FISH CULTURE.

A New Field for Profitable Enterprise.

The Chinese were the first to raise fish by artificial means. They, however, practised this industry for ornamental rather than for useful purposes. Our gold fish come from there, and the monstrosities of the fish kind obtained by them, if capable of perpetuation, would form striking facts in support of the Darwinian theory of the variation of species under domestication. The Chinese never proceeded further in the application of this discovery. Jacobi, an inhabitant of Lippe Detmold, Germany, was probably the first European to experiment with success in fecundating the ova of the salmon and the trout. His results were first published in 1763, and so important were they then considered that he received a pension from the English Government.—His method was the same as practiced until lately wherever salmon and trout ponds have been established. He took a female salmon or trout whose ova was mature and extracted the ova by a gentle pressure of the hand along the course of the abdomen. He next treated the male in the same way, and discharged the milt of the latter over the ova. For nearly a hundred years Jacobi's method was known, but was used by naturalists in their scientific investigations. It was never, to any extent, brought into general use.

The merit of having started and popularized the science of pisciculture belongs to two fishermen, Remy and Gehin, of the Department of Vosges, France. This was in 1848. Their successful labors attracted the notice of the French Government, and the new process, both by the practical application of it by the Government and by private individuals, was rapidly developed. Since then it has been greatly extended—new improvements have been introduced, adding the certainty of the spawning and to the preservation of the life of the young fry, until at length fish culture has become in Europe, and in some of our Northern and Middle States, a recognized and remunerative branch of industry. For this the States to the north of us are indebted to the perseverance and ultimate success of a few men whose names are now becoming widely known. The best known of these are Mr. Seth Green, as a skilful breeder of fish, and Messrs. Roosevelt and Genio C. Scott as popular writers on the subject.—Mr. Roosevelt delivered, by invitation, a lecture on fish culture before the Legislature of Maryland at its recent session, which will be found elsewhere, and subsequently a commission was appointed for the purpose of making further investigations in Maryland waters and of bringing the results before the people. A full and practical report, it is probable, will be made by the committee in due season.

Fish culture has heretofore attracted too little attention among us, considering our many advantages for prosecuting it successfully. We have numerous streams and brooks whose waters are of the proper temperature, and which are admirably adapted to fish breeding. We have markets near at hand which are ready to absorb all supplies of the choicer kinds of fish which can be furnished them. The supply from our natural fisheries is abundant enough, at present, for certain kinds of fish, but it lacks variety.

There is no reason whatever why we should not raise all the finer and rarer kinds of fish by breeding them quite as well as our Northern neighbors. Besides stocking our rivers, it only requires some little display of individual energy to establish private breeding ponds. The cost of these, and of the rude buildings connected with them is singularly small, and although no returns can be looked for until the close of the third year, yet from that time forth the supply is constantly accumulating, and by enlarging the number of ponds can be made almost illimitable. In respect to stocking our rivers, the black bass has already been introduced into the waters of the Upper Potomac, and though the river is considerably fished, the number of bass is steadily increasing. The trout which were formerly found in such abundance in many of our streams have now become quite scarce, and something must be done to extend the propagation and culture of this fine fish for the supply of our markets. The admirable trout ponds of Mr. Peter Herdic, at Williamsport, Pennsylvania, shows what can be done in this respect. Though established but three or four years, counting the young fry of the last breeding season, he has in all of his ponds not less than two hundred and fifty thousand trout, some of the largest are eighteen inches long, and will weigh four pounds.

HALF ACRE GARDEN WILL PAY.—A correspondent in the *Germantown Telegraph* thus sets forth the blessings of a well cultivated garden: Half an acre of land in a well-cultivated garden, will produce as much towards subsisting a farmer's family as any three acres on the farm, beside the advantage in the cultivation of which would gratify a diversity of tastes, and contribute much to secure the blessings of health, the labor of which can be shared also by the too young or too old to toil in the heavier operations of the field, and occasionally by the female inmates of the house, or the plowman from the field by way of relaxation from leg-toil, without any material impeding to other labors. Every farmer will best promote his interest by bestowing on the garden a due share of attention.

Get what you get honestly, and use it frugally.

Our Agricultural Calendar.

Farm Work for June.

The season of preparation is now passed, and that of cultivation occupies the attention of the farmer. Some few of the main crops such as Buckwheat and Ruta Bagas are yet to be put in the ground. Late clover is also to be cut and the hay harvest about to commence. For the rest, the chief occupation is steady field work—the tillage of the growing corn now rapidly advancing under the hot suns and occasional rains which are usual in June. Of course the month is one of steady persistent industry, for it precedes the harvest, and it is necessary to complete, if possible the cultivation of the corn crop, and to put the other operations of the farm in such a forward condition as to allow of the use of all or nearly all the hands in the harvest field, with the addition of such others as the exigencies of the occasion may require. Upon the matters to be attended to at once, or carefully provided for, we now proceed to touch.

Harvesting.

In this latitude the harvest rarely commences before the fourth of July, but further south the wheat crop matures earlier and all the hands are therefore busily engaged in the work cutting and gathering during the latter weeks of June. But whenever harvest begins, the first consideration should be that the field force is commensurate with the work to be done—a few days lost may entail many additional days of labor.

Harvest Implements.

These should be of the very best kind in use.—They facilitate the work; they make cleaner fields and they are easier for the workmen to handle.—Reaping and mowing machines are now in such general use that to commend them would be but a waste of words. In many localities, and especially on large farms, they have revolutionized the whole system of harvesting. The precision with which they cut the grain is simply wonderful, and the raking appliances now attached, work admirably and keep a full force of binders actively employed.

Time of Cutting Wheat.

The proper time for cutting wheat is when the straw below the ear begins to turn yellow and when the kernel, pressed between the fingers, has the consistency of dough—wheat left to mature until it is dead ripe shatters considerably, and there is also much loss by the breaking off of the heads, the straw beneath them being then very brittle. The experiment made by Mr. Mannan, an English farmer, some twelve or fourteen years ago is conclusive as to the economy of cutting wheat before it gets too ripe.—

He divided a part of a grain field into five slips all adjacent to each other, and cut each slip as follows:

No. 1	Cut a month before it was fully ripe.
" 2	" 3 weeks "
" 3	" 2 weeks "
" 4	" 2 days "
" 5	" when ripe.

The result in the yield of flour was as follows:

No.	Flour.	Seconds.	Bran.
1	75lbs.	7lbs.	17lbs.
2	70 "	7 "	16 "
3	80 "	5 "	13 "
4	77 "	7 "	14 "
5	72 "	11 "	15 "

We see by this experiment that the grain which was cut two weeks before it was fully ripe, (No. 3) gave an increase of flour over the ripe wheat (No. 5) of 6½ lbs., and a gain of 15 per cent. on the flour of an equal measure of grain. What more complete exposition of the advantages of cutting early can be required?

Cultivation of Corn.

Stir constantly the corn with the shovel plough, and follow with the cultivator. Keep the soil loose and clean, hoe about the hills, if weeds appear, and push matters so that the corn may not suffer during the period of harvest, even if all the hands are withdrawn from the corn field to assist at the ingathering of the hay and wheat crops.

Beets, Mangold Wurtzel, Carrots.

We have already, in previous numbers of the *Farmer*, treated of the cultivation of these excellent roots, and have urged that the seed of them should be gotten in early. If this has not been done a fair crop may yet be had if the seed is drilled in on well manured ground not later than the 10th of June.

Late Potatoes.

These should have been planted in May, and chances of a good crop if planted early in June are small, depending much on the season and frequent rains. If planted now, choose a cool soil, rather moist than dry, or one with a northern exposure—make the soil rich and use wood ashes, in addition to manure, or some fertilizer which contains a good deal of potash.

Broadcast Corn and Millet.

Both of these grains for a forage crop might, with advantage, have been seeded earlier. It is not however even now, too late provided the ground be well ploughed and heavily manured. Of corn sow not less than three bushels to the acre, and of millet not less than one bushel.

Clover for Hay.

Cut clover for hay when about half the blossoms are turning brown.

Buckwheat.

Prepare the ground for buckwheat and get the seed in by the 15th of June, and certainly not later

than the first week in July. There is every advantage in pushing forward the buckwheat so as to allow it to mature before the early frosts come on. It is tender and succulent in its growth, and is easily affected by frost. Buckwheat will grow on almost any soil, but a light, rich loam, is the best. If the land requires to be enriched, either of the following mixtures will be found sufficient for an acre:

No. 1. 10 two-horse loads of barn-yard manure; 10 two-horse loads of woods' mould or marsh mud; 8 bushels of bone dust; 10 bushels of wood ashes, and 1 bushel of plaster. Mix, spread broadcast and plough in.

No. 2. 5 two-horse loads of woods' mould; 150 pounds of super-phosphate; 10 bushels of wood ashes, or their equivalent in potash; broadcast and plough in.

Quantity of Seed to the Acre.—Sow from two to three pecks to the acre.

Time for Cutting.—To prevent shattering, cut when half the grains are ripe, which may be known by their turning black.

Ruta Baga Turnips.

The Ruta Baga is one of the most nutritious roots for stall feeding. It is also hardy, and if the product is less than that of the mangolds, or of the sugar beet, it is nevertheless sufficiently large to encourage its more extensive use.

Time of Sowing.—Sow at any period between the 15th and 25th of June.

Method of Culture.—Either in drills or broadcast, but the former mode is by far the best.

Soil.—The soil best adapted for ruta бага is a light, rich loam, inclining to sand or sandy loam, rather than to clay. In new grounds or clover or grass lays, well ploughed and thoroughly worked, the ruta бага thrives admirably.

Preparation.—Deep ploughing, say not less than eight or ten inches is absolutely necessary to the proper growth of this crop. After the land is ploughed it should be carefully pulverized by a frequent use of the harrow and roller.

Manures.—To grow a large crop of ruta bagas the soil must be rich and naturally of a good quality. If the seed is to be sown broadcast the manure to be used must be hauled out and spread over the land before ploughing. If, on the contrary, the drill system is adopted, the manure should be applied directly to the drills as in planting potatoes; the drills being then covered and flattened on the surface by passing a roller over them before putting in the seed.

Manures for an Acre of Ruta Baga.—No. 1, 15 two-horse loads of well rotted manure, 10 bushels of wood ashes.

No. 2. 250 pounds of phosphatic guano—1 bushel of plaster, 1 bushel of coarse salt—one-third less will suffice when planted in drills. If broadcasted the whole will be none too much.

Quantity of Seed per Acre.—Broadcast $1\frac{1}{2}$ to 2 pounds per acre. Drill in 1 pound per acre.

After Culture.—Dust the plants on dewy mornings before they come into rough leaf, either with lime, wood ashes or soot, to prevent the ravages of the fly. Thin out to eight inches apart, when the plants are in rough leaf, and immediately run a cultivator through the interval between the rows.—Give also the plants themselves a light hoeing, to eradicate all weeds; a week later give them a second and similar working, and continue the process every two weeks as often as may be found necessary.

LUCERNE.

This valuable forage plant flourishes on fertile soils in the Southern States, and is worthy of greater attention on the part of those who are in want of a rich and nutritious food for soiling purposes. The following is an extract from the proceedings of the Farmer's Club, New York Institute :

Mr. Curtis read a paper upon the value of this plant for soiling. He says of it : "It will grow in the same climate and soil with red clover, but needs stronger land, and, being a native of Southern Europe, requires, to perfect itself, more sunshine and warmth. This peculiarity can be remedied to a considerable extent by a rich soil, a warm exposure and stimulating manures. When furnished with these advantages, its rapid growth, and the amount of lucerne which can be taken off from a small piece of ground is most astonishing. From four to six crops can be cut in one season from the same land. For flesh-forming and nutritive elements, it is superior to red clover, containing 50.7 parts to 41.2 in clover. Like clover, it covers the ground with a dense shade, thus enriching the soil while the roots strike down into the subsoil to the depth of several feet, defying drouth, and leaving the land in admirable condition for subsequent cultivation. Lucerne resembles clover in appearance, with a smaller leaf, and if left to ripen, has a more woody stem. I would not recommend it to take the place of clover for general purposes, but I do most emphatically endorse it for a soiling plant to meet the great want of the dairyman and stock-breeder. For horses it has special merits ; not being soft and washy, they are not liable to scour on it. It is perennial. Once get it rooted, and with a clean soil it will thrive for years, yielding its excessive burdens of richness.—The seed is larger than clover seed, and when ripe and fresh, glossy and yellow—as the sample shows. They can be obtained of any first-class dealer at fifty cents per pound. The crop may be sowed with grain rye being the best ; but it is preferable to sow alone—how, eight to ten pounds of seed to the acre,

Garden Work for June.

We have nothing to remark in the way of general observations this month, for the preparatory work in the garden is well over, and the after culture consists in keeping every thing in good order and protecting the plants against drought. The work for the month is as follows :

Setting out Cabbage Plants.—Whenever it is possible to do so cabbage plants should only be set out from their seed beds in moist cloudy weather. In dry seasons, the process of transplanting should be towards evening, and after the work is done water should be freely applied, and the plants kept shady for a few days until they have accommodated themselves to their new situation. In pricking out the plants from the bed it is better, where a limited number of plants is to be set out, to take them up singly with a scoop trowel and with a portion of the earth attached. If this is carefully done their growth will not be checked at all—if however a large number of plants are required, care should be taken in lifting them, to retain as many of the fine roots as possible. As they are drawn they should be deposited in any kind of vessel containing six parts of fine earth, one part of soot and one part of flour of sulphur reduced, by adding water, to the consistence of cream. Dip the roots in this mixture which will preserve the plants from wilting, and also from the ravages of the cut worm and the fly.

Peas.—Continue to sow peas, but at this season choose a shady part of the garden; sow a few drills at intervals of two weeks for succession; water the drills when planting.

Melons and Canteleupes.—Keep these clean and well watered throughout the month.

Transplanting Cauliflower and Broccoli.—Treat these in setting out in the manner prescribed for transplanting cabbage. The bed where they are to stand to mature, should be enriched by a heavy dressing of cow or horse manure, well rotted and dug in almost half a spade deep and thoroughly incorporated with the soil. Frequent waterings after sunset of an evening are absolutely necessary in dry weather.

Sowing the Seed of Cauliflower and Broccoli.—Sow seeds of these in warm, open borders, any time during this month for a full supply.

Beans.—Plant bunch beans at intervals of two weeks for succession. Choose for this purpose a cool shady border and water occasionally.

Lettuce.—Transplant lettuce for heading.

Small Salading.—Every week sow a bed of small salading to keep up a constant supply.

Radishes.—Thin out the young radishes to three inches apart, and sow fresh seeds of the summer

kinds at intervals of ten days. The white turnip radish is to be preferred.

Spinach.—Drill in a few rows of spinach every ten days. The ground cannot be made too rich for this healthy and desirable vegetable.

Carrots and Parsnips.—These should have been seeded a month ago, but if a farther supply is needed, or seeding has been delayed, they may be drilled in at any time previous to the 10th of the month.

Sowing Cabbage Seed.—Prepare a bed for cabbage seed, chiefly Flat Dutch and Savoy, to be transplanted hereafter for winter use.

Cymlins and Cucumbers.—Hoe these well and keep them free from weeds.

Lima and Carolina Beans.—See that these are kept clean and poled, and draw occasionally a fresh supply of earth about their roots.

Beets, Parsnips and Carrots.—All these roots now require attention; keep the earth loose about them, weed them thoroughly, and in dry weather do not spare the water, but do not apply it until after sunset.

Early Turnips.—Sow a bed of turnips late in the month for early use.

Salsify or Vegetable Oyster.—Keep this excellent root free of weeds, and stir the soil about it freely and often. Do not let its growth be checked for want of water.

Onions.—Work these occasionally, keeping the soil loose about the bulbs but not covering them.

Okra or Gumbo.—Thin out the plants where they stand too closely together to eight inches apart and earth up.

Tomatoes, Egg Plants.—Transplant these, if not set out before, during the early part of the month.

Red Peppers.—Set these out from the seed bed—work the young plants occasionally, and give them a good supply of water in dry weather.

Endives.—Set out plants from the seed bed and sow additional seed for a late crop.

Late Roasting Ears.—Plant a few rows of corn for late roasting ears.

Pot and Medicinal Herbs.—Prick out from the seed bed such plants as are large enough to remove during moist or cloudy weather and shade them for a few days until the young plants have taken root.

Peach Trees.—Examine the roots of peach trees a few inches below the surface of the ground. If gum exudes, the worm is certainly at work under the bark—take a pen-knife and cut it out by following its course, or follow it up with a piece of wire or a coarse knitting needle. Do not desist until it is found and destroyed—throw wood ashes around the roots and cover all up again.

We like to see warm weather come again, so we won't have to endure *Chin-chilly*.

TRANSPORTATION OF VEGETABLES, &c.

A commission house of New York furnishes the following directions for packing, though not as full as desirable. The first principle to be observed is the packing, and the main point in this is ventilation:

Onions and potatoes should be fully matured before shipment, for if they are not fully matured and packed dry, they will easily rot. Do not expose them long to the sun to dry, but as they become dry pack them, for the sun will burn them.

Tomatoes should be pulled just on the turn to ripen. If they are pulled too green they will rot before they will ripen, and if pulled ripe, they will rot before they reach their destination.

Cucumbers, peas and beans should be ripe, but not enough to be liable to turn yellow, they being saleable only while having a green color.

Citron melons should be shipped green nearly matured.

Water-melons should be ripe.

Onions, tomatoes, cucumbers, peas and beans should be shipped in bushel crates, a description of which we herewith submit.

Potatoes should be shipped in barrels well ventilated. Bore at least three holes an inch in diameter in each stave, and several in the bottom. Cover with stout cloth covers, and cooper the barrels tightly.

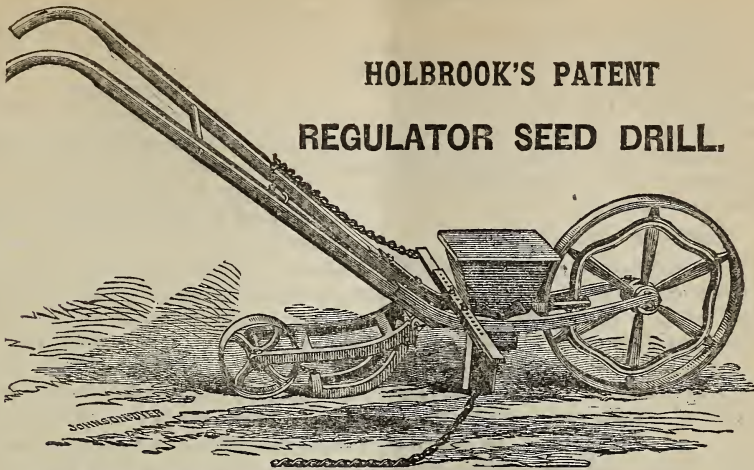
The yellow sweet potatoe is the only kind that is saleable in the New York market. They are produced from the Jersey slip, which can be furnished to all who may want them. Cull the Irish and sweet potatoes well before shipment, and the culls can be shipped, marked "culls." They will bring half price. If shipped mixed in with large potatoes, they will injure the sale of them. Every one will find it advantageous to ship good quality stuff.

Water-melons and citron-melons can be shipped in three bushel crates, made the same as the bushel crate, but much stronger.

Dimensions of Bushel Crate.—Inside measurement—Length, 21 inches; depth, 16 inches; width, 8½ inches; No. 1, the top, and No. 2, the bottom, is a solid plank, about three-quarters of an inch in thickness; No. 3, the ends and middle partition, is solid plank, about three-quarters of an inch in thickness. The sides are slats about one-half inch thick, and one and a half inches wide, nailed on about one inch apart.

Dimensions of Three Bushel Crate.—Length 30 inches; depth, 20½ inches; width, 12½ inches. The neater the crate is made the better the goods will show. Nail your crates securely. We would advise them to be strapped, as they are handled roughly in shipment.

Always fill the crates well, packing the articles tightly, as they cannot shake about, and they will not rot as quick as they would if they could shake about.



For Sowing Bee's, Carrots, Onions, Turnips, Sage, Spinach, Sorghum, Broom Corn, Peas, Beans, etc.

The editor of the *Practical Farmer* having used this Seed Drill, gives an illustration and the following description of the implement in a recent number of that journal:

The above is a good illustration of a seed drill, which we have used with entire satisfaction on our own grounds, and is approved wherever known. It is manufactured by F. F. Holbrook & Co., Boston, Mass., who are the inventors and manufacturers of several of our best agricultural and horticultural implements. We copy the following from their circular, considering the Regulator Drill worthy of all they say about it:

"The Regulator Drill has the following advantages:

1. A malleable iron frame, giving the machines lightness, strength and perfect uniformity. It has flanges to receive the handles, and support and hold them firmly in place; also, eyebolt bearings for the travelling wheel.

2. A large traveling wheel, so that the machine is easily propelled.

3. A flange-cam on the side of the traveling wheel, attached by a connecting rod to the agitator, gives it the required motion for stirring the seed in the hopper. No other machine has so perfect a device for stirring and distributing the seed by a positive motion.

4. An agitator arranged with arms keeps the seed constantly stirred without injuring it, prevents it from packing in the hopper, and insures its continuous and regular delivery.

5. A dial containing every size of hole required for sowing the different kinds of seed in such quantity as may be desired, and readily adjusted for dropping the kind to be sown without tipping or turning over the machine.

6. A seed conductor, with a plow-foot to make the drill of any required depth, is open at the rear to prevent clogging, and has its inner surface *enamelled white*, so that the operator can, at a glance, see how the seed is being dropped. In all other machines the inner surface of the seed conductor being of dark color, or closed up, it is impossible to determine whether or not the seed is dropping while the machine is in motion. This is a valuable feature, as it prevents any mistake or failure in sowing the seed.

7. The hinged marking sticks, with drag-weights at the ends, mark the next row to be planted much plainer than

the marking-chains in general use, particularly on uneven ground.

8. The coverer works effectively, and can be adjusted to cover the seed more or less.

9. The roller ridges the earth over the seed, preventing injury from heavy rains soon after sowing.

10. The Regulator Drill is very thoroughly made of the best material of malleable iron and oak timber, is compact, durable and simple, and very easily operated. All springs, slides, reeds and brushes being dispensed with, it is not liable to get out of order."

They can be supplied by the manufacturers or of E. Whitman & Sons, Baltimore. Price \$13.

NUMBER OF PLANTS

Produced by a given quantity of Seed, and quantity of Seed required for a given amount of land.

	PLANTS.
1 ounce of Asparagus.....	1,000
1 ounce of Broccoli, Cabbage, Cauliflower, Egg-Plant and Tomato.....	4,000
1 ounce of Celery and Lettuce.....	10,000
1 ounce of Leek and Pepper....	3,000
1 ounce of Beet will sow one rod.	
$\frac{1}{2}$ ounce of Carrot will sow one rod.	
2 ounces of Parsley, Parsnip and Salsify should be allotted to every three rods.	
1 ounce of Onion contains 9,000 seeds, and will sow one rod, requiring from three to five pounds to the acre.	
4 ounces of Radish, broadcast, will sow three rods; if sown in drills, one-half the quantity will be sufficient.	
8 ounces of Spinach, broadcast, will sow five rods; if sown in drills, one-half the quantity will be sufficient.	
1 ounce of Cucumber will plant 200 hills.	
1 ounce of Melon will plant 120 to 150 hills.	
1 ounce of Watermelon will plant 40 to 50 hills.	
1 quart of English Beans will plant about 60 feet of row.	
1 ounce of Squash will plant 50 to 100 hills.	
1 quart of Peas will plant from 150 to 200 feet of row.	
1 pound of Turnip is sufficient for 1 acre.	
5 to 8 bushels of Potatoes will plant about one acre.—	

Ferre, Batchelder & Co.'s Catalogue.

CULTURE OF FISH.

The following is a condensed report of the Lecture of Mr. Roosevelt, of New York, delivered before the Legislature of Maryland on the evening of March 16th. Mr. Roosevelt is one of the Commissioners of Fisheries of the State of New York, and delivered the lecture at the invitation of Gov. Bowie :

PROFITS OF PISCICULTURE.

Mr. Roosevelt was introduced by Speaker Latrobe, and in the course of his lecture, which lasted over an hour and a-half, fully explained the process of fish culture, and gave much interesting information in reference to the best mode of restoring Maryland fisheries to their normal condition. Fish culture, he said, in the first place pays as well, if not better, than most occupations. He said that the establishment of Mr. Seth Greene, of Rochester, New York, produced ten thousand trout per day, and the clear profits were ten thousand dollars a year, more than twice the sum paid by the State of Maryland to her Governor. There are quite a number of other fish-hatching establishments in full operation, giving in some instances a large remuneration to their proprietors. Among these he mentioned the following established since 1868 : Wm. H. Furman, of Maspeth, Long Island ; Mr. Kellog, at Hartford, Conn. ; Stephen H. Ainsworth, of West Bloomfield, New York ; Aaron S. Vail, of Smithtown, Long Island ; Judge Tilden, of Lockport, New York ; Thaddeus Norris, the eminent writer on fishing and fish culture, at Asbury, New Jersey ; P. H. Christie, of Clove, Dutchess county, New York ; Jeremiah Comfort, Spring Mills, Montgomery county, Pa., and Benj. Kilburne Littleton, N. H.

FARMING AND FISH CULTURE.

The lecturer made a comparison between farming and fish culture, and said that a person could go into the one just as profitably as the other without experience, though he would not advise an experiment in either case. A fish carries from ten thousand to a million of eggs in its ovaries ; each of these is as full of vitality and as capable of being made productive as the grain of wheat ; but in practice not one in a thousand hatches. Let a farmer scatter his seed right and left over his fields, on meadows, and fallows, on stony places and highways alike ; let them plow, before or after sowing, indiscriminately, and he will reap but a scant harvest ; and yet that is the way in which nature sows with both vegetables and fish. And great as is the difference between such natural wastefulness and scientific agriculture, a hundred-fold greater is the difference between the natural and artificial propagation of the water. As the ova of the herring exceed in number the kernels in an ear of wheat, so much should

the yield from fish culture exceed that of land culture.

FECUNDITY OF FISH.

To show the comparative fecundity of fish, he said the yellow perch, weighing $3\frac{1}{2}$ ounces, spawns 9,943 eggs ; the river smelt, weighing 2 ounces, spawns 25,140 eggs ; the fresh water smelt spawns 80,000 eggs ; the shad spawns not less than 50,000 eggs. He quoted from the last report of the commissioner of fisheries of Maine, by which it appeared that the issue of a pair of salmon would in a few years, if every egg hatched, cover the entire State of Maine three hundred feet deep with fish. That, however, he thought might be a pleasant idea to New England where unsightly rocks are the principal production of the soil. No one would think of such a thing but a Yankee, one of that class which have an inveterate desire for putting things topsy turvy, and getting the wrong one on the top.

It is a fortunate circumstance that all the eggs do not hatch and come to maturity. There is a river in Brazil of which the natives say in dry weather that it is more fish than water ; but were the enormous fecundity of all species of the scaly gentlemen to meet with no drawback every lake, river and ocean would become crowded to repletion, and the sea would be putrid with their decaying carcasses ; but to supply the waste wrought by the necessities of man, this fertility is invaluable, and offers to us a most encouraging picture for the future, when the resources of the land shall, by teeming myriads of human beings, be strained to the utmost.

THE BLACK BASS.

The black bass, which belongs to the *percideæ*, is a common fish, exceedingly abundant in the Western and Northern lakes ; it is fine fish, both on the hook and the table, and is well worthy of more general distribution. It breeds freely and increases rapidly, as it has the excellent judgment to guard its eggs from depredators, instead of following the example of trout in devouring them as soon as they are voided. When the eggs have been deposited by the female, the male stays about the spot, drives off, and sometimes eats up intruders, bravely guards the eggs until they are hatched, and possibly takes care of the young until they are able to take care of themselves. This excellent habit of conjugal and parental fidelity is greatly to his own credit, and our profit. The best way of treating them is to carry mature fish, which bear confinement well in cold weather, to such ponds as are adapted to their wants, and to leave them to shift for themselves.

The various attempts at artificial propagation have not been altogether remunerative, and their natural increase is abundantly sufficient. As they are ferocious in their habits, sometimes called the "tiger of the waters," care must be taken to put them

only in waters not already occupied by some valuable breeds, for they will utterly destroy and root out every other kinds except the pickerel. Black bass were lately introduced into the Potomac, where they are now reported to be numerous. They found their way naturally into the Hudson river several years ago, by the opening of the Champlain canal, and have been acclimated in many of our Northern lakes and ponds.

PROPAGATION OF TROUT.

The *salmonidal* class of fish are more difficult to raise from the eggs. These fish, when approaching their time, seek special spawning grounds; trout run up into little rivulets or springs brooks, away from their enemies, the eels and perch, where the water comes fresh and warm.

The speaker gave a description of the method of propagating trout as practiced by Mr. Greene. A basin of pure water, of the proper temperature, is the first requisite. The "ripe" female (that is, full of eggs, ready to be deposited) is held over the basin, and her sides are gently pressed with the thumb and forefinger. The ripe eggs ooze from her, and drop into the basin. They must immediately receive the impregnating principle. A male fish is held over the basin, manipulated in the same manner as the female, and gives off the "milk," which drops into the basin, and by some mysterious affinity the eggs are germinated. The eggs of the trout are heavy, and drop to the bottom of the basin like shot. The contents of the basin are then put into troughs, divided into compartments of eighteen inches each, through which a stream of pure water flows, of a temperature of 50 degrees. Should the temperature rise to 68 degrees, the eggs will perish. The sides of the trough are generally lined with glass, and the bottom is sometimes covered with small pebbles, but this is not essential. In from forty to sixty days the eggs are hatched, and the little trout, with a protuberance called the unutilical sack, (a remnant of the egg shell,) appear. They are fed on thick milk until they get large enough to eat more substantial food, when pounded liver is added to their bill of fare.

In the face of all these difficulties the speaker said that Mr. Greene had carried the process to such perfection that he estimates that ninety-nine out of every hundred trout eggs that he obtains hatch and produce healthy young. Still, both salmon and trout are hardly fitted to be subjects of State cultivation. The latter because their care can be better left in private hands, and the former because we have but few streams in which they have been known to exist naturally. I cannot tell whether Maryland has waters suited to trout, although it is very possible that some of her numerous streams may be of the proper character, but it is probable

that no Southern waters are adapted to the production of salmon. Trout suffer when the temperature of the water exceeds sixty-five degrees.

SHAD IN MARYLAND WATERS.

Mr. Roosevelt then turned his attention to the shad, a fish, he said, which surpasses all others in its adaptability to cultivation, and whose numbers can be increased with the least trouble to the most enormous extent. While trout eggs require from forty to sixty days to hatch, shad eggs require but six or seven days. The speaker, recurring to the time when shad sold, at the falls of the Potomac, for "a bit," as it was then called, apiece, and said: "That they have increased in price so extensively of late is your own fault, and if they are not restored to their former condition soon it will be your fault hereafter. Your territory is cut up by streams and penetrated in every direction by water courses that are adapted to migratory fishes like the shad and herring. You have the Susquehanna and Bush rivers and tributaries, draining Harford and Cecil counties; Gunpowder, Stemmer's run, Herring run Patapsco and tributaries, draining Baltimore county; Patuxent and tributaries, draining St. Mary's, Calvert, Charles, Prince George's, Anne Arundel, Howard, Montgomery and Carroll counties; Potomac and tributaries, draining St. Mary's, Charles, Prince George's, Montgomery, Frederick, Washington and Allegany counties; Elk river, draining Cecil and Kent counties; Sassafras river, draining Cecil and Kent counties; Chester river, draining Kent and Queen Anne's counties; Choptank river, draining Talbot, Caroline and Dorchester counties; Nanticoke river, draining Dorchester and Wicomico counties; Pocomoke river, draining Somerset, Worcester and Wicomico counties.

THE RIVERS FOR SHAD.

To bring your rivers into proper condition, some of them will want fishways, to enable the shad in their spring migration to overcome the dams that have been erected and to reach the head waters. The erection of an impassable dam is as much an outrage upon the owners of shore property above where the fishery is ruined by such an obstruction as would be the seizure of any article of value belonging to the same individuals; and such dams should not be allowed except when proper passages are left for the migrating fish. In most of the rivers, however, the artificial propagation of shad is a necessity. Nature makes its provisions for certain casualties; a stream has a certain fixed capacity beyond which it cannot go naturally; it reaches a point of production at which the rate of destruction equals that of an increase, and there is an equipoise. There are rivers in some of our Northern States in which every species of fish have become extinct, and

which are now absolutely depopulated, although they were once well stocked. To meet such cases certain protective laws must be passed, and I believe that something of this kind has already been attempted with you; but fish culture is, after all, to be the main resource.

PROCESS OF HATCHING.

The speaker referred to the numerous experiments of Seth Greene in the artificial propagations of shad. The manipulating process was the same as in trout, but it required swift running water to do the hatching. All that is necessary is to put the impregnated eggs into boxes with one side full of holes, fastened to buoys in the current of the river. Let them remain for fifty or sixty hours, and then turn the infant brood into the water to earn their own living. They go out to the sea and in three years return full-grown shad. The males come back in two years and are called by the familiar name of "bastard shad." The female returns in three years to spawn. The shad attains its best development at four years. Mr. Roosevelt was of the opinion that shad always returned to the river in which they were propagated. In a river in Germany an experiment had been made by clipping the dorsal fins of a number of shad and throwing them into the water. Next year some of them were caught and identified by the mark.

The speaker, in conclusion, said that fish culture was yet in its infancy, but remarked that every day was adding to our knowledge and making new discoveries. He did not allude to herring fisheries, because their artificial propagation has not been much studied, but the principles governing it, he thought, were the same as those governing shad culture. The speaker finally presented a copy of the law for the protection of fisheries and fish culture which has been proposed by the New York commissioners in that State, and explained how far it was desirable or applicable in Maryland.

TABLE

Showing the amount of Seed necessary for an Acre, and the number of Pounds in a Bushel.

	No. of lbs. per bus.	Quantity usually sown per acre.
Timothy.....	45	$\frac{1}{2}$ to $\frac{3}{4}$ bu.
Red Clover.....	60	10 to 15 lbs
White Clover.....	60	8 to 10 lbs
Hungarian Grass.....	48	$\frac{1}{2}$ to $\frac{3}{4}$ bu.
Buckwheat.....	52	1 to $1\frac{1}{2}$ bu.
Red Top.....	14	1 to $1\frac{1}{2}$ bu.
Orchard Grass.....	14	1 to $1\frac{1}{2}$ bu.
Oats.....	32	2 to 3 bu.
Rye.....	52	2 to 3 bu.
Carrot.....	60	2 to 3 lbs
Beef and Onion.....	60	3 to 5 lbs
Parsnip.....	60	3 to 5 lbs
Turnip, broadcast.....	60	1 to $1\frac{1}{2}$ lbs
Beans.....	60	$1\frac{1}{2}$ to 2 bu.
Peas.....	60	$1\frac{1}{2}$ to 2 bu.

When cows get hold of fowl weeds in the spring, the butter will let the same leak out.

SUMAC:

In anticipation of the season for gathering, we give the following directions for the preparation of sumac for market:

Directions.—The sumac should not be taken before the leaf is thoroughly matured—say the middle of July. It can be gathered as long as the leaves will stick to the stem or until killed by frost. Its turning red does not hurt it. The little black sumac, as it is called, is as good as any. The red berries must be thrown out.

It may be wilted in the sun, but must be cured under cover, and not allowed to be burnt by the sun or to get wet, or to be in such large quantities as to heat in curing—any of which destroys its color and strength and renders it valueless. It should not be thrown upon a tight floor to cure, but raised up, so as to let the air get under it. All sumac should be gathered at least a month before it is sufficiently cured to be brought in for sale, and in bad weather even a longer time may be required to properly dry it: for not only the leaf, but the stem too, must be thoroughly dry. All the sap must be dried out, so that the stem will snap short off, like a clay pipe stem, or it can not be received, for it will heat and spoil. This must be strictly observed.

However long sumac may have been taken or however dry it may be, it will draw the dampness from the atmosphere in a damp time, and must not be packed until it is perfectly dried out again. We cannot receive sumac when damp any more than when green. It must be dry.

Sumac should be the same bright color when taken from the bush, and must not look dark or smell musty. It is just as important to have your sumac in good order when brought to market as anything else. If sand or dirt of any kind, or any other kind of leaves, are found among it it will not be bought at any price at all.

The leaf is what is wanted, but to facilitate the gathering of it you can strip off the blades—that is, take the little twigs upon which the leaves grow, all of which will be bought when properly cured, according to the above directions, and one dollar and fifty cents per one hundred pounds will be paid for it in this condition. Sumac stripped off or bladed as above is preferred but merchants will buy threshed Sumac and pay for it according as it is cleaned, providing it has the greater part of the stem taken out and is not made so fine as to entirely destroy the formation of the leaf and thus prevent the detection of adulteration. Don't cut it up.

The stripping off the leaves is apt to kill the sumac, and when the stock dies the roots connected with it die also; but if you will cut the old stock down, the roots will sprout up again better than ever.—*The Farmer's Gazette.*

BROOM CORN.

An experienced grower of Broom Corn, writing for the *Western Rural*, says:—

"The soil for the broom corn should be rich and free from weeds. Heavy clay lands are unsuited to it. Rich mellow bottoms are best suited to its growth. The soil is prepared the same as for corn, and the seed is sown as early in the Spring as the ground is fit to receive it in, drills three and one-half to four feet asunder. About four quarts of seed will be sufficient for an acre if put in carefully with a drill. When the plants are strong they should be thinned and the ground between them hoed to keep down weeds. The harrow and cultivator should be kept going between the rows, and a double mold-board plow is used by some growers with good effect.

"The evergreen variety gives the greatest return, but it is somewhat later ripening than the common and dwarf kinds. When it is nicely brushed out, the tops are bent and allowed to remain in this position for a week or so, more or less, according to the state of the weather. It is then cut and piled or spread in little bundles of about an armful in each. It is easier cured if spread a little. It is generally cut when the straw is beginning to change from green to yellow and while the grain is in its milky state. Frost is injurious to it; so is rain.—The latter coming when the bush is lying in the field after being cut, causes it to heat and mildew, making it brittle and discolored.

"Green brush sells best, but when baled too green, it heats and spoils rapidly. After being cut, one day's exposure will be sufficient if the weather is fine: better house it at once after cutting than allow it to get wet. It can be cured in sheds or houses, on racks or joists, far enough asunder to admit a good circulation of air. A large quantity of brush may be cured in a medium sized house or shed, by having several tiers of racks, one above the other, with spaces of a foot or more between each. When well cured the brush is baled. When cut too green, the stalks will shrivel and be unfit for market; when allowed to become too ripe, the brush turns yellow and becomes brittle; a mean between the two extremes is the safest course.

"The evergreen variety may be allowed to become riper before cutting than the common or dwarf, and in some cases may be permitted to bring the seed to perfection, without danger to the brush. The seed is taken off by a machine constructed for the purpose, and is sometimes scraped off by simpler means. From 200 to 250 pounds of brush are put into a bale. The acreable yield is from 500 to 1,000 pounds, more or less, according to the richness of the soil and also to the variety that is

grown. The price of the brush has a very wide range, varying from \$50 to \$250 per ton, according to the quality. When cultivated on a large scale, with appropriate buildings, in the manufacturing of the broom, the profit is much greater than when operations are performed on a small scale without suitable conveniences."

Another correspondent writing to the same paper gives the following on the cultivation of Broom Corn:—

"First select a good, rich piece of land; plow deep, and get it in the best possible condition.—Then mark off one way with what we call a "Go Devil," which consists of a piece of scantling nine feet long, or longer, if you desire wider rows.—This needs to be four by six inches, with holes morticed at equal distances, in which to put plows a foot long, made of wood. Then put in shoes, and you have the required "Go Devil." When marked off, take a common hand corn-planter, set to plant twelve seeds to the hill; make the hills 19 or 20 inches apart. I have planted fifteen inches apart, and raised No. 1 brush, and 800 pounds to the acre. This requires strong land. When done planting, run a light harrow over, so as to cover all seeds that may be on or near the top, run a roller after the harrow, so as to crush every lump that may be left, and you will leave a smooth surface to work on. When the corn all gets up, commence cultivating by running a small hand harrow as close to the corn as possible. If foul, hoe well, and tend as other corn.

"The best variety to plant is the dwarf, which far exceeds the kinds known as the Shanghae or the York. These are inferior, because they are badly mixed with Imphee. The brush is very coarse and crooked, and does not bring so much in market as the dwarf.

"The dwarf broom corn delights in a loose, rich soil; bottom lands are best, if not wet; does better in dry soil than in wet; grows from five to six feet high, with a root that runs two or three feet deep in the ground. The stalks cannot be beaten for fodder; cattle eat them up clean. Harvesting commences about the last of August, and must be done promptly, in order to have a good quality of brush. Commence cutting when the seeds are in the dough. Spread it on scaffolds to dry. When dry, bale in a hay press if a smaller press is not available."

HARVEST BEER.—Put into a three gallon cask two quarts of West India molasses, a large cup of strong, fresh yeast, and fill it up with lukewarm water.—Shake it well, and put it in a warm place. It will be fit for use on the next day, but will only keep for a short time. If the yeast is not very good, a larger quantity will be required to work the beer.

PROFITS OF DRAINING.

At an agricultural convention, recently held in New Hampshire, the Hon. Simon Brown, of the New England Farmer, made the following statement as to the profits of draining :

I am very much surprised that any man should doubt whether tile drainage will pay. I will relate a little experience of my own in that matter. I had about five acres of land that occupied nearly all the front part of my farm. It was the meanest and worst piece of land, I think, without any exception, that I ever saw. I came to the conclusion that nobody would think I was much of a farmer if they saw that piece of land in that condition, however well I might do elsewhere. A part of it had been the receptacle for small stones, old stumps and timber, and such like, for many years, and it was very poor. We cut a small quantity of water-grass on it,—perhaps 600 or 800 pounds to the acre. It was not worth cutting, and when it was mown, the water would come up to the men's knees. Ten years ago, I commenced digging through this piece of land and putting in stone drains, and it took all the leisure time of three men and myself, for two years, to get that piece of land so that it was fit to lay down. I laid that down in 1861. After three or four years, I cut a very heavy crop of hay from it. But I found I had been working very imperfectly, and in 1866, I commenced to tile drain this land, going as near three feet deep as I could, and laying the drains about 20 feet apart. The result is, I have taken the water all out of it. In 1867, I planted it with potatoes, and grew as large a crop of potatoes as I ever saw, but it being a bad season, they rotted considerably, so that the crop was not great.—I sowed this land the 16th day of last March, with herds-grass, and I got a very good crop there this year. It was rather a bad season for land sowed at that time. I have got that land so that I have mowed it a number of years with the mowing machine, where before it was impossible to have driven a horse at all. I have no doubt the land would sell for 10 times more than it cost to bring it into this condition. I took off grass enough to more than pay twice over what it cost me to drain the first time. I put in a hydraulic ram down below, by which I have had a supply of water, at a trifling expense. If this does not prove to any man that that job paid, I don't know anything that will.

How to SAVE YOUR SHOE SOLES.—It consists merely in melting together tallow and common resin, in the proportion of two parts of the former to one of the latter, and applying the preparation, hot, to the soles of the boots or shoes—as much of it as the leather will absorb. One farmer declares that this little receipt, alone, has been worth more than five years' subscription to the newspapers publishing it.

DETERIORATION OF WHEAT.

The subjoined letter from Hon. Horace Capron, Commissioner of Agriculture, in reply to one written him by the Hon. B. C. Cook, of Congress, concerning the deterioration of wheat, will demand the attention of wheat growers generally :

DEPARTMENT OF AGRICULTURE,
Washington, D. C., March 24. }

Dear Sir :—Yours is received referring to the frequent receipt of letters from farmers complaining of the failure of wheat in your district. Your apprehension that such failure may be due to the fact that the seed is not changed often enough is by no means groundless, though more than one cause exists for such decrease of production. Among these causes are the following :

Deterioration from Imperfect Seed—Regard must be had to pedigree in wheat, as in cattle or horses, or deterioration is sure to result. Among wild herds the prevailing law of the strongest aids in preserving its average excellence, but the prevalent neglect of selection of seed of cereals is a sure means of degeneracy ; seed is generally taken at random, often an inferior and imperfect quality, because No. 1 wheat commands a higher price in market. Like produces like, and this shrivelled grain tends to slow growth in the plant, to late ripening and consequently greater risk of insect ravage, it is immature and lacking in vitality, and decreased plumpness and diminished weight may be expected in the harvest. It may have germs of mildew affecting it, with insufficient vitality to resist the attacks of fungoid enemies.

2. *Deterioration by in-and-in Breeding*.—The use of the same seed year after year undoubtedly tends to deterioration, on the well known principle holding in animal reproduction.

3. *Neglect of Rotation in Crops*.—On the richest wheat soils with continued cropping, even with a change of seed and careful selection, a diminished yield is usually apparent after the second crop. Illinois, Minnesota, California, Australia—ever famous wheat section known—attests the certainty and rapidity of decreased production under a practice which disregards rotation.

4. *Deficient and careless cultivation*.—As a rule the only preparation for seeding is a slight scratching of the soil, sometimes only a harrowing of the weedy, grassy, uneven surface from which corn has just been cut, and weeds have there an equal or superior opportunity for growth, and eventually smother and dwarf the wheat, furnishing a prolific cause for deterioration.

The wheat plant is susceptible of great improvement if the same judgment and care is exercised as is exhibited by successful breeders of farm animals. It will also degenerate with wonderful facility under the average management of pioneer wheat growers. After this careless culture becomes unprofitable, and probably not until then, will the requisite means for improvement be used. Is it not now time to commence such improvement in Illinois ?

Yours respectfully,
HORACE CAPRON, Commissioner.

Some ill-bred fellow has found out that husbands are like dough, because wives knead them. It has never occurred to us before, but may not this explain why there are so many crusty fellows ?

GATHERING AND CURING PEANUTS.

A correspondent at Huntsville, Ala., asks for information as to the "best time for gathering, especially the safest and best mode of curing and getting from the vines" a crop of peanuts. From an article in the last Report of the Department of Agriculture (1868,) we extract the following on the subject:

"The time for harvesting the crop is from the 15th to the 30th of October, immediately after the first frost. When the crop is forward, or when it is an object to get a portion of it early in market, the operation may be commenced in the latter part of September; but the longer the vines continue to grow, the greater will be the number of sound pods. Select a time when the weather is settled and favorable, and with three-pronged hoes loosen the vines along the rows. Hands follow the digger, pull up the vines, shake the dirt from them, and leave them in the same place. In dry weather they will be sufficiently cured in two days to be shocked. Showery weather, though it may somewhat delay the curing, does no injury.

One of the advantages of shallow culture becomes apparent in harvesting. When the fruit is deposited only a few inches below the surface, the vine is detached from its position with little or no loss; when the depth is greater, the stems or pedicels are liable to be broken off.

In shocking, provide stakes seven feet long, made sharp at both ends; then lay two fence rails on the ground as a foundation, but with supports underneath to afford free access to the air. The stakes are stuck in the ground at convenient intervals between the rails, the stacks built up around them, and finished off by a cap of straw to shed the rain. The diameter of the stack is made to conform to the spread of a single vine.

After remaining about two weeks in the stack the picking should be begun, taking off none but the matured pods. These are to be carried to the barn, and prepared for market by completing the drying process, and then fanning and cleaning.

The most tedious part of the work is the picking. An expert discriminates at a glance between the mature and immature pods, but cannot pick more than two and a half or three bushels per day. A machine to perform the operation would be a most valuable invention. Unless the management in the barn is carefully conducted, there is great danger, where there is much of a bulk, that the peas will become heated and mouldy. The condition in which the early deliveries are often received at market renders this caution quite necessary. In fact, there is as much slovenliness in the handling of this crop as there is in regard to any other; perhaps more, for the reason that so many inexperienced persons engage in the culture every year. Until the pods are thoroughly seasoned, the bulk should be frequently stirred and turned over."

The following method is pursued by M. J. Holt, one of the most successful cultivators of this crop in Virginia, which we take from the *Richmond Dispatch*:

"From the 10th to the 15th of October is the time we usually commence to dig. They should be dug with a prong hoe or ploughed with a regular peanut plough. Great care and attention are necessary in harvesting and shocking the vines. If this is not properly done the nut will be dark, and of course its market value materially injured. We usually shock on rails laid across billets of wood, putting three shocks on one set of rails, the shocks about five or six feet high, *one vine deep*. Some persons, when they have but few, cap them with hay or straw to keep out the rain. If the vines are properly shocked, and the weather good, they will cure sufficiently in three weeks to pick off. Never shock while the vines are damp from rain or dew. Some shock immediately after digging, others let them take a day or two of sun."

If half of the poor women who eke out a miserable existence in our large cities would go into the country, they would not only better their own condition but that of their sisters left behind. But advice of this kind, unfortunately, is the very last they are disposed to take.

CONVERTING STRAW INTO MANURE.

The editor of the *Ohio Farmer*, in reply to a correspondent who asks "how he may convert a large stack of straw into manure, so that it may be used the coming fall as a manure for wheat," replies as follows:

This is an important question, and one that thousands of farmers throughout the country should ask of themselves, and at the same time adopt some means of doing the work. It takes a straw-stack very many years to rot down into manure, and no wise farmer will wait for this. There are several methods adopted for decomposing straw; one, and in our opinion the most profitable, is to use it as a stable feed and litter in the winter time; another is by scattering it in the furrow behind the plow, and covering it up; a third by spreading it over the surface of a field in the Spring and burning it. By this means the heat destroys the upstarting weeds, and the ashes make a valuable fertilizer.

It is, of course, too late [April 9th,] for the adoption of the first method by our correspondent, and receive any benefit this season, and as to the second, a great deal of labor is required to accomplish the desired end, and sufficient decomposition would not take place to render any material aid to the first crop. We do not believe the full value of the material can be obtained by burning, as most of the worn land needs loosening up as well as strengthening, and straw is one of the very best materials for this purpose.

Our advice would be to let the stack stand until fall. Go on and put in the wheat as well as it can be done, and then draw out the straw and sprinkle it over the entire surface of the field, if you have enough. In this way you secure a double value; the mulch protects the wheat plants in winter, preventing the upheaving of the roots by the action of the frost. It will be noticed that wherever a coating of snow remains upon a wheat field during winter there is a vigorous growth in the spring, and here is the philosophy of using straw as a mulching; more frequently the snow is blown than melted away—the straw retains it.

The dressing may be put upon the field as soon as the grain is harrowed in, or after the fall growth is completed, but not profitably at any time between these two periods. The coating, if put on at seeding time, should not be so heavy as to prevent the free growth of the grain. After the crop has been removed, the straw, which will then be considerably rotted, may be plowed under with the stubble when a second benefit will be derived.

THE GEORGIA STATE FAIR, will be held at Atlanta, on the 19th of October, 1870.

STONES ON EARTH AND GRAVEL ROADS.

The following we extract from a very full and valuable essay on "Country Roads and Road Laws," from the Agricultural Report of 1868. We are indebted to the Hon. Horace Capron for the use of the accompanying cut of "Wilkinson's Improved Rut Scraper and Grading Machine," the object of which is explained as follows :

In preparing earth and gravel road-beds, all small stones, down to half the size of a hen's egg, should be removed from the surface soil, as the tendency is for them constantly to work up to the surface, where they are injurious to the feet of the horses, and to vehicles, wear and break the lading and destroy the road. The wheel of a loaded vehicle, falling from a stone over which it has rolled, even if it is not more than two inches in height, will injure a road surface more than the natural rolling wear on a smooth surface in running a mile. The same may be said of the effect of loose stones on a macadamized road, only that the damage to the latter is more serious than to the earth-road surfaces, which will in some degree repair themselves ; but the displaced macadamizing material is strewn upon the surface of the road, greatly increasing the evil.—Next in importance to drainage is the removal of loose stones from the surface of the road, and the best and cheapest mode in thus clearing earth and gravel roads is to run the Rut Scraper or Grader over the road, commencing at each margin with the scraper, so set that the surplus earth, stones, &c., will be continually deposited toward the center of the road. Having passed the scraper over the entire surface, by passing up one side and down the other, all the small stones to be removed will be deposited in a narrow row on the middle of the road-bed, from which they may be rapidly gathered by the use of the malleable cast-iron coal-scoop, which being latticed allows the earth and gravel to fall through. Loose stones may thus be removed from the surface of earth and gravel roads at perhaps one-tenth the cost of hand picking, and all ruts filled at the same time. The loose stones on macadamized roads should be frequently picked off, and the side tracks kept in order by the use of the grader, as above described.

Great advantage and economy result from passing the rut scraper over earth and gravel roads as soon after every rain-fall as the soil becomes dry enough to flow before the scraper, and readily fall into the ruts and depressions in the road surface.—Where water is allowed to stand until evaporated from the ruts, large and frequently dangerous mud-holes are the consequence ; and as they are generally repaired by casting in stones, small and large, the road is made worse, instead of better. Mud-

holes in roads are striking examples of a verification of the adage that "prevention is better than cure;" and prevention can be effected in the most simple and economical manner, by the use of the rut scraper. If taken in time, it is rarely necessary to haul soil for repairs, that removed by the scraper from the margins of the ruts generally being all that is requisite to raise the depressions to the proper grade.

The objectionable course of conveying surface water across roads on the surface, instead of by the use of a proper culvert, is common in all parts of the country, even on macadamized roads charging heavy tolls. The damage annually done to teams in such cases is more than the cost of a culvert.—These water crossings are often, in winter, a sheet of ice ten to twenty feet in length and as wide as the road, in crossing which teams are often seriously injured by slipping.

Pea Weevil—How it enters the Pod—Remedy.

The editor of the *Canada Farmer*, in reply to certain enquiries from a correspondent, gives the following account of how the weevil enters the pod, and remedies for the same :

On each pea may be observed a slightly discoloured round spot, which is found on inspection to be caused by a hole in the pea, under the thin hull, containing a small blackish beetle. It certainly at first sight appears strange how the perfectly developed beetle can have got into the pea when the skin is entirely unbroken, but a little insight into the history of the creature explains the seeming mystery. When the peas are in blossom, the parent beetle lays its eggs in the tender pod. From these hatch out tiny little worms, which perforate and enter into the soft newly developed peas, making a very minute hole which speedily closes up with the growth of the pea. The worm grows as the pea increases, eating away at the mealy part of it and usually sparing the germ, till at length it assumes the pupa state, and finally, when the pea ripens, completes its transformation into a perfect beetle. Here it remains, with only the thin epidermis between it and the outer air and liberty, all winter, till the warmth of spring bids it eat through the husk and perform its proper avocations.

The following remedies may be mentioned : Keep the infested peas in tight vessels over one season ; that is to say, instead of sowing the produce of last year's crop this spring, keep them till next year.—The weevils will soon come out with the increasing warmth, and finding no escape, will die in the vessel before the end of the year, and thus the peas will be free from their attack. Another mode is to dip the peas in boiling water just long enough to kill the beetles, but not destroy the germ. *One minute* is sufficient.

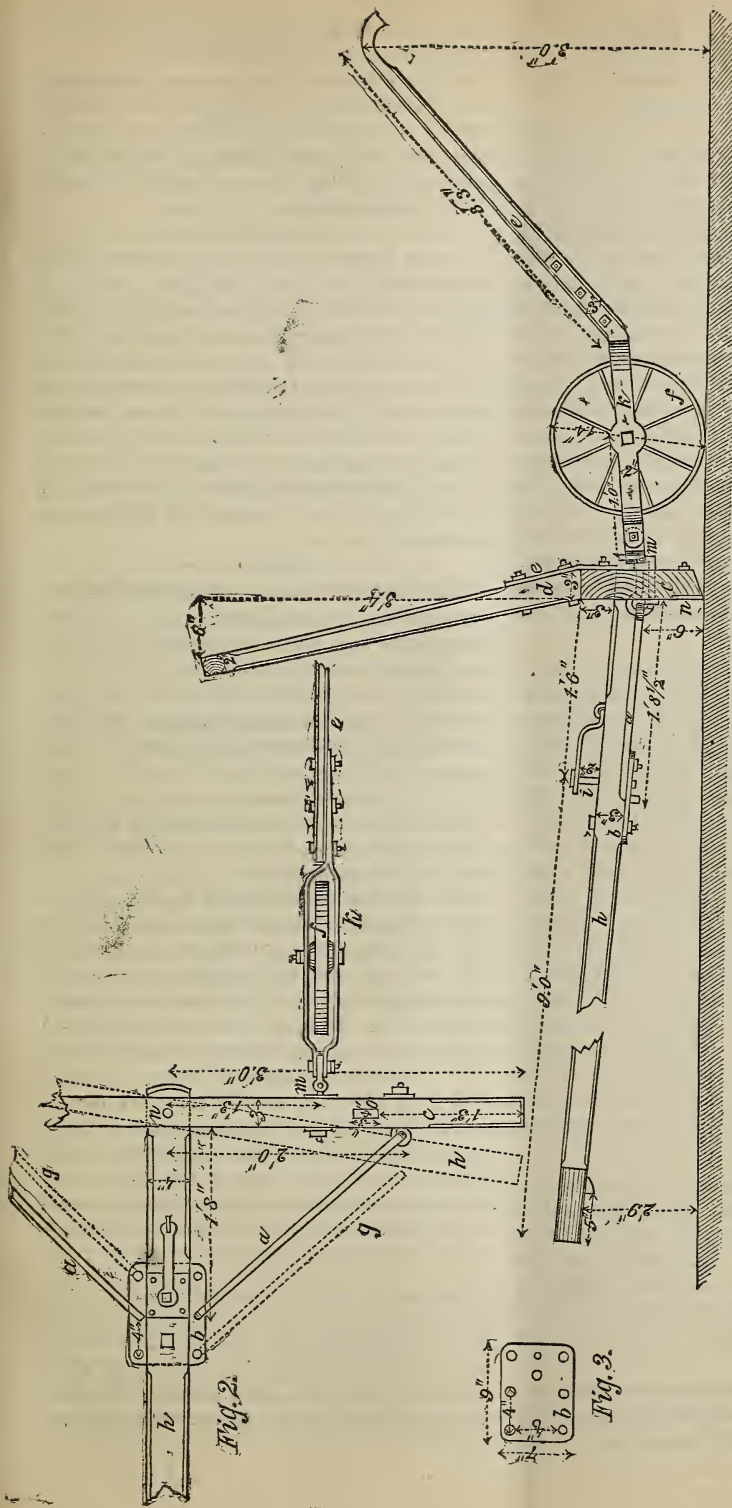


Fig. 1.

Willkinson's Improved Rut Scraper and Grading Machine.

FIG. 1.—Elevation of the grader; *a*, pole on which horses work; *b*, frame of $2' \times 3'$ posts for driver to lean against, with bar $2' \times 3'$ framed on top; *c*, cast-iron wheel $1' \frac{1}{4}'$ diam.; hub of wheel $3'$ center diam., $2' \frac{1}{2}'$ at end; length of hub $3'$; hole for axle, $\frac{1}{8}$ inch; *d*, levers of bent plow-handles attached to frames *k*, in which fulcrum wheels *f* run; *e*, cast-iron plate on bottom of front side of grader, $\frac{1}{4}' \times 2'$, bolted to plank and frame as support; *f*, iron frame $\frac{1}{4}' \times 2'$, in which fulcrum wheel *f* runs; *g*, eye by which levers are attached to grader plank; *h*, side of grader, showing mode of attachment to horses, with rolling fulcrum wheels *f*. The end of frame attached to eye *m* forms a vertical flexible joint, and the eye turning on pintle of hook, passing through grader plank, admits of the eye turning right and left, thus producing a sort of universal joint, by which levers are attached to plank. By bearing on levers, the weight of grader is thrown on rolling fulcrums, which admits of the operator discharging soil accumulating in front of grader. The horizontal angle of grader, with pole, is changed by moving the weight of grader forward and the other backward in cast plate *b*, bolted to under side of pole. The dotted lines show position of grader and braces when latter are changed in holes of cast plate. The object of changing angle of grader and pole is to cause grader to cut hard surfaces with greater efficiency, and to cause it to deposit surplus soil in front of it at either end. In grading loose surfaces, and where there is no object in casting to either side, the grader should be set at right angles with the pole. *o*, mortise on top of plank, into which the uprights of oblique frame are set; *p*, bolt of $\frac{1}{4}'$ round iron, attaching pole to plank. This bolt should have an eye large enough to receive the head, for convenience in taking apart; bolt holes should go through plank; pole should be $2' \times 4'$ at back end, inserted into plank full size; mortise in plank which receives pole should be of length to admit of changing angle of pole with grader. FIG. 2.—Plan of plank *b*, $\frac{1}{4}$ inch thick.

Fig. 3.

The Poultry House.

BREEDING FOR POINTS.

Points are certain characteristics of a breed in a race or sub-race of animals (birds and fish are animals), possessing as a rule very similar, or the same general appearance in form, color, or traits, and resulting from the selection of breeding individuals by man. Points may be classified as those which are useful—on which the intrinsic usefulness of the breed depends, and those which are simply characteristic. A breed may be an accidental one, or one which has been bred for a series of generations with certain points in view—the breeders selecting only those individuals which possessed them, for breeding stock. The fifth toe in Dorkings, the feathered legs in Brahmas, the white face in Spanish, are characteristic points. Size and breadth of breast and shoulders in the first quick growth, early maturity and size in the second, and laying many large eggs in the third breed, are useful points, and not less characteristic than useful.

We have certain breeds of poultry which are regarded primarily as useful, others are esteemed almost entirely for their beauty, or singularities, while others afford both pleasure from their beautiful plumage, or for gallantry, and profit from their flesh and eggs. The object for which fowls are bred should determine the weight to be given to certain points. In the pre-eminently useful breeds, the profitable or useful points, should settle within certain bounds, the simply characteristic ones.—For instance, if it can be proved by a course of breeding that the single comb in Light Brahmas, only four toes in Houdans, rose-combs in Leghorns, and red earlobes in Hamburgs, generally accompany birds of the greatest usefulness, and having other characteristic points in the highest excellence, it would become a question with breeders and fanciers, whether or not to admit birds possessing such peculiarities in competition with those marked according to standards.

If in the general experience of breeders, it is found that birds possessing certain points, very commonly or uniformly excel in hardiness, size or other characteristics, they will almost without consultation, select their breeding stock possessing these points, unless some arbitrary or ill-judged standard forces them to throw out their best birds for inferior ones.

The influence of climate and surroundings, may produce changes in a breed which will absolutely prevent great excellence being attained by fol-

lowing the same rules for the selection of breeding stock which prevails in another country.

In view of these and other considerations, ought we not in this country to study breeds independently and with great care? Ought we not compare notes freely and discuss these subjects? and ought we to be bound in all things by English Standards.
—*Cor. Poultry Bulletin.*

FEEDING POULTRY.—It has been ascertained that, if you mix with your food a sufficient quantity of egg-shells or chalk, which they eat greedily, they will lay twice as many eggs as before. A well-fed fowl is disposed to lay a large number of eggs, but cannot do so without the materials of shells, however nourishing, in other respects, her food may be. Indeed a fowl fed on food and water, free from carbonate of lime, and not finding any in the soil, or in the shape of mortar—which they often eat off the walls, would lay no eggs at all, with the best possible will.

WARTS ON FOWL'S HEADS.—You can inform your subscriber that the sulphate of copper (bluestone) dissolved in lime juice, or sour orange juice, or water, applied once a day for two or three successive days, I have found a certain cure in almost every case. I have used this remedy in the island of Cuba, where the disease is quite common.—E. H. BARTLETT, in *Country Gentleman*.

HEN LICE.—At a recent meeting of the New York Farmer's Club, a member said that he had extirpated hen lice as follows:

Turn the fowls out of the hen house, and put a peck of charcoal and five or six pounds of sulphur in an old stove, kettle, or other safe receptacle, set it on fire and shut up the house close until it is thoroughly fumigated. This had resulted in destroying all the lice in the house and exterminated them from the fowls that afterwards roosted therein.

TO MAKE HENS LAY IN WINTER.—Give them a good supply of chopped meat—the refuse from the house at the butchers' shops—provide warm, airy quarters, with plenty of range in fine weather, and you will have an abundant supply of eggs. Gravel and lime should also be furnished them along with a liberal allowance of grain, and a plenty of water.

CHICKENS.—A correspondent states that for some seven years his chickens have been kept free from lice by strewing small branches, or sprays of cedar about the henery. Previous to the use of this remedy, they were badly infested. No white-washing, or other means to expel vermin have been used.

Horticultural.

THE CURRANT WORM, AND HOW TO CIRCUMVENT HIM.

A correspondent of the Essex County (N. Y.) *Republican*, thus describes this destructive pest, and tells how to stop its ravages: "The species of worm that gives us the most trouble in this vicinity, is about $\frac{3}{4}$ of an inch in length, of a dark green color, and presenting a spotted or mottled appearance.—The miller that deposits the eggs is about the size of the common bee miller, with broader wings, and of a dark brown color. They deposit their eggs about the 10th to the 15th of June, on the under side of the leaves, generally on the new suckers, and close to the ground. The eggs are white, and glued to the stem of the leaf in a row, the ends nearly touching—not only on the main stem, but also on the branch stems, there being sometimes one hundred on a single leaf. They hatch in three or four days, the young worm crawling from the stem to the thin part of the leaf, where it at once begins its work of devastation, being invariably blessed with a ravenous appetite. The first indication of their presence will be seen in the leaf in which they were hatched, being pierced with holes about the size of a pin head, each worm making a separate hole. They continue to gnaw round and round until the several holes meet, and the leaf is entirely consumed, when they all emigrate in a body to the leaf above, which soon disappears; and so on, leaving nothing but the withered stems behind them. After following up to the top of the sprout they started on, they then separate, and go off to different branches of the bush. They live about 25 or 30 days on the bush, when they fall to the ground, change to the chrysalis form, work themselves into the ground, and there remain until about the first of next June, when they reappear in the form of a perfect miller, to repeat the operation of the year before.

"My method of fighting these plagues is as follows:

"Keep close watch of the bushes after they are fully leaved out, examining very closely the lower leaves on the new shoots, and as soon as you see one that is perforated with small holes, pick it and drop it into an old pail, and so go carefully over all the bushes every other day, as long as the worms continue to hatch, which will be about 2 or 3 weeks, and burning the leaves plucked. Be sure and pick each time, going over the bush, every leaf gnawed by the worms. I have about 75 as fine bushes as you can see, while most of the currant bushes in this vicinity are entirely destroyed. I have had to be vigilant and persevering, but I have conquered so far, which is some satisfaction, as well as the pleasure of having all the nice currants I want to use."

Take Care of your Fruit Trees.

Not long ago we saw two men endeavoring to plant a pear orchard of one thousand trees, and we watched their methods of planting.

They dug holes not quite two feet deep and two feet wide, into this threw a little muck, and then planted the trees. The field was naturally wet, and we thought should be drained. On looking for tiles we found none, and no evidence of drains except one drain of poles, running through the lowest part of the field, and not more than two-thirds of the way across. We could not help expressing the feeling that these men would see the day to regret so slight an attention to the necessities of fruit planting.

What will be the result? In holes with cramped space, cold ground, unpruned limbs, standing water, etc., these trees, costing fifty cents each, will in three years be reduced one-half in number, and the rest live an indifferent existence.

It would have been better to have spent one-half that sum on but *one acre* of land, simply planting one hundred trees instead of one thousand, preparing the ground well, draining thoroughly, manuring well, and then every spring and fall prune and search for insects and worms. At the end of ten years this little orchard would be in perfect health, a beautiful sight, and wonderful in productiveness. Most fruit growers attempt *too much*. Instead of concentrating their efforts upon a few acres, they spread their capital over many, and lose on all. True success in fruit culture comes only in *careful beginning, moderate progress, and thorough work. A little land well tilled brings a good purse well filled.—The Horticulturist.*

How to Prevent the Attacks of the Apple Tree Borer.

At about the end of May or the beginning of June, according to the warmth of the weather, the winged beetles of the Apple Tree Borer begin to deposit their eggs on the bark of the tree. They do this at night, depositing only one in a place, selecting sometimes the forks of the main branches, but more commonly the trunk of the tree near the ground.

If, then, at about the first of May the whole of the trunk of the tree, up to and including the forks of the main branches, be thoroughly washed with cold-made soft soap, or well covered with whitewash, or even well washed with a solution of potash, the alkali will kill the eggs, or the young grubs as soon as hatched, if the female insect should chance to deposit them on the tree. But insects are all endowed with most wonderful instincts, and it is very doubtful whether the parent beetle ever deposits her eggs on a tree that is thus covered with a strong alkali. Those who have tried this preventive unite in saying that the trees thus treated are never attacked by borers of any kind, but remain sound and safe.—*Canada Farmer.*

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THE CHINESE YAM.—A correspondent quotes a description of the Chinese Yam, and asks us for some information concerning it. The qualities of the yam in question, is extravagantly described in the extract to which he refers, and any attempt to grow it on a large scale will result in disappointment.—In the first place our correspondent is mistaken as to the paper from which he quotes. It was the *Carolina Farmer* and not the *Canada Farmer*, and the yam will not flourish well outside of the Southern States. It is a tropical root and though highly commended by some persons, is certainly no better, if it be so good, as the West India Yams, so frequently to be found on plantations at the South.

KENT COUNTY AGRICULTURAL SOCIETY.—On Monday, May 9th, five delegates from each of the District Farmers' Clubs of this county, met in the Rooms of the Central Club, Chestertown, and adopted a constitution and by-laws for an organization. All members of the District Clubs may become members of the County organization by paying annually the sum of one dollar. After the adoption of the constitution and by-laws, an election for officers was held, with the following result: President, James A. Pearce; Secretary, Chas. H. Baker; Treasurer, John W. Corey.

A FINE SAMPLE OF COSTWOLD WOOL.—Mr. C. J. B. Mitchell, of Queenstown, Maryland, has sent us a lock of wool from his Cotswold Buck, which is one of the finest samples of the sort we remember to have ever seen. Mr. Mitchell writes us that the fleece from which this lock was taken weighed 18½ lbs. and some of the locks measured 17 inches in length. The one before us is very nearly that length, and is a remarkably beautiful specimen of the wool of the Cotswolds. Who can beat it?

CONDITION OF WINTER GRAIN IN MARYLAND.—From the Monthly Report of the Department of Agriculture for March and April, we extract the following:

"Wheat is backward and thin in Montgomery, Howard, Harford and Kent. It 'begins to grow and look healthy' in Washington; it is 'small but healthy' in Baltimore; late, though 'some fields look well,' in Cecil; 'good' in Prince George's; 'excellent' in Anne Arundel; 'looks well in well-drained fields' in Queen Anne's. In some level clay soils the plant was drowned or frozen out; a smaller quantity of fertilizers than usual has affected growth in many places; and the cold autumn was a disadvantage that was general."

AGRICULTURAL SOCIETY.—At a meeting of the Directors of the Southern Maryland and District of Columbia Agricultural Society, held at Hunting-ton, Prince George's County, Maryland, on Tuesday, May 17th, 1870, the following officers for the ensuing year were elected, viz: CHARLES E. COFFIN, of Muirkirk, Vansville District, Prince, George's County, President; BENJ. M. PLUMB, of Washington City, Corresponding Secretary; JOHN SNOWDEN, of Vansville, Recording Secretary; WM. S. HUNTINGTON, of Washington City, Treasurer; ROBERT BOWIE, of Cedar Hill, Agent.

NEW YORK STATE AGRICULTURAL SOCIETY.—The Executive committee of the above Society met at Albany on the 13th April. The annual Exhibition for 1870 is to be held at Utica, September 27-30. The Premium List was thoroughly revised, and in the live stock classes the prizes were considerably increased.

NORTH CAROLINA STATE FAIR.—Kemp P. Battle, Esq., President of the North Carolina State Agricultural Society, has issued a circular announcing that the Executive Committee has fixed upon the 18th, 19th, 20th and 21st of October next as the time for holding the State Fair for 1870.

PUTNAM COUNTY (GA.) AGRICULTURAL FAIR.—Robert Young, Jr., Secretary, announces that the Third Annual Fair will be held on the 12th of October, 1870, and continue three days.

CORN CULTURE, &c.

To the Editors of the Maryland Farmer :

I am a subscriber to your valuable magazine, and always find some interesting as well as valuable reading matter on farming. It would be of much interest and importance to us farmers if we would occasionally give you information of experiments for publication in your valuable paper, as agriculture is supposed by many practical farmers to be in its infancy, and much is yet to be learned; by so doing we might instruct each other on many points.

I wish to say a few words in regard to corn culture. This important cereal is the pride of American industry, and is made a speciality in Baltimore County; in a good season we are not far short of a million and a half of bushels. The crop of 1869 was a partial failure—many fields were scorched, consequently a light crop produced—at the same time we noticed fields that were nearly an average yield, side by side, the land being the same quality and fertilized alike. It is an erroneous opinion entertained by practical farmers that corn should not be plowed or cultivated too much. The roots will be injured by the operation, we admit; this might be the case when the corn is large, by running the plow too near the stalk. Corn cannot be worked too often until it begins to tassel. I noticed all the fields that were thoroughly cultivated—worked five or six times—were not scorched much, and a good crop was made; fields that were plowed only a few times were badly burnt up, and made only a few barrels of inferior corn to the acre. Here the profit was lost by omitting a small part of the labor that would cost but little. The root constitutes the plant's mouth. It terminates in a small sponge; the sponge drinks up the moisture from the surrounding earth. If the ground is thoroughly cultivated the dews are sufficient to moisten the ground, and the roots receive it. Where the ground is slothfully cultivated it will soon get hard, and weeds soon make their appearance. In time of a drought the dews and slight showers are of but little benefit, then the corn will soon begin to scorch, and generally the crop is nearly lost. It is a low estimate to put the loss at one hundred million bushels annually in the United States by this improper mode of culture. If a thing is worth doing, it should be done right.

BALTIMORE COUNTY.

MAY 4th, 1870.

FEED BEES IN SPRING.—L. S. Ebersole, in *Bee-Keepers' Journal* says: All colonies should be closely watched till the flowers are plenty, if they are scarce of provision, when the days get warm, if the bees starve out, the whole colony will leave the hive, and after they leave once, I have found it impossible to reconcile them otherwise than to exchange combs with some other hive, for combs with brood and plenty of sealed honey.

Salting Hay.

As hay-making will be upon us in a short time, says the *Germanatown Telegraph*, the following views of a correspondent will not be inopportune. He is undoubtedly correct. We never held any other opinion than here entertained. Hay, properly cured, needs no preservative—neither lime nor salt. The application of either, therefore, is a waste of both time and money. Our correspondent says:—

"When I was a boy 'my old boss' always made it a rule to salt his hay as it was hauled in, by spreading a layer of hay all over the mow and then sprinkling it with a little salt and so on to the top of the mow or until the hay was all in. He was considered a *good farmer*, and that was the general custom of the neighborhood, and nobody appeared to doubt its utility. Thus I grew up into manhood so habituated to the practice that when I went to farming on 'my own hook,' I pursued the same plan for a time; but some eight or nine years ago I somehow or other got to thinking that the salt thus used was a waste, both of time and money, and oftentimes of hay too, and concluded to abandon the practice, at least for one season. But my hay came out so clean and bright that I wanted another trial of it the next year, and the next, and next, and have never salted any hay since, nor do I think I ever shall. I believe the only *good* effect it has (if any) is to season the hay so the cattle will eat it better; but that is a very small matter, for if hay is cut at the right age and properly cured there will be little trouble on that score. But on the other hand the sweating of the hay caused the salt to dissolve, thus making too much moisture to dry out without causing the hay to mould, which it almost invariably did whenever I salted it. How plain can I remember the white flakes of mouldy hay I used to feed to the cows when a boy."

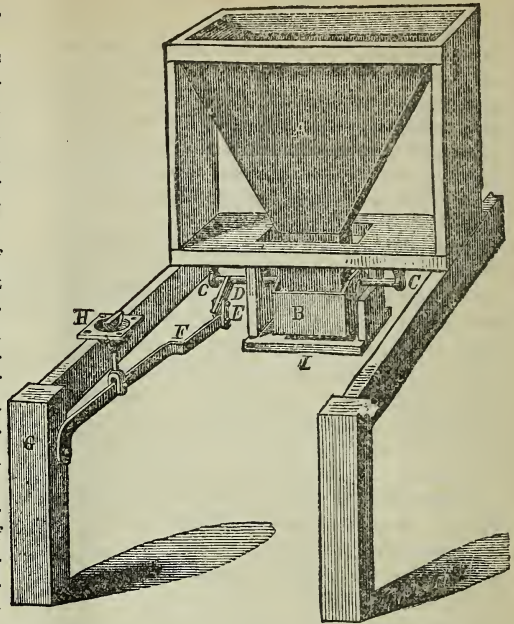
PRESERVING HYACINTH BULBS.—Those of our readers who have been growing hyacinths in pots in the house will find that by following the subjoined directions, they can use their bulbs again for forcing again next autumn. Bulbs grown in glasses over water, however may be thrown away, as they are past renovation:—"As soon as the flowers wither, take the bulb out of the earth in which it has bloomed, wash it and the roots clean, and lay on the lid of a hamper, or on clean straw, in an airy, shaded, but dry place. Turn the bulb frequently, and when the roots and leaves, etc., have dried up, trim them off, remove loose scales and ripe offsets, and when the bulb is perfectly dry, lay it by in a drawer, closet, or basket until the following autumn. By this method, the exhaustion of the bulb, after flowering, is saved."

Earth Closets and the Manure Question.

We have observed at various times articles in several of our leading scientific and agricultural exchanges on the Dry Earth system, and believing that branch of it pertaining to Earth Closets and the highly valuable fertilizer which is the product, will directly, as well as generally, interest our readers, we propose giving the subject some notice.

The purifying and deodorizing properties of the soil are familiar to us all, as a very slight burying prevents the odor of a decaying carcass being noticeable; a thin covering of earth suffices to suppress the odors of a fresh manure heap; and the most disgusting of all common smells, that of the skunk, may be entirely removed from articles of clothing and other things contaminated with it, by burying them in the ground; while our carnivora animals, whose excrement is especially offensive, furnish an evidence of it and the teachings of nature, by always turning and carefully covering their droppings. An evidence of the antiquity of disinfecting human excrement by the aid of common soil may be found in Deuteronomy, chap. xxiii, 12 and 13.

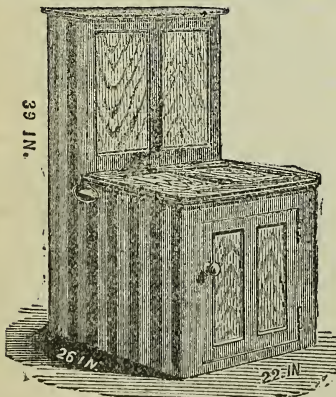
The action of dry earth is not only chemical but physical, and consists mainly in the absorption and removal of the moisture necessary to the decay of organic substances; the formation of dangerous gases is thus prevented, and the animal mat-



THE MECHANICAL PARTS OF THE COMMODE.

The same Fixtures are used in Closets.

A, hopper for conducting earth to chucker. B, chucker for throwing earth forward to cover. C, axle or crank revolving chucker. D E, pivots. F, horizontal lever bar. G, fixed pivot of lever bar. H, handle above seat for operating lever bar.



THE COMMODE.

ter is left to a slow decay (combustion) and no odors can arise. A small amount of earth is sufficient to disinfect a considerable quantity of putrid or offensive matter, and its use has therefore been adopted in hospitals in cases of bad sores and wounds. The system has been in use abroad for several years, and was introduced into this country

about two years ago, and its adoption in various sections gives the strongest verdict in its favor.

Man draws more largely from the soil in his food than any other animal, and would, therefore, return more to it in his exuvia; but the difficulty has been to so deodorize and manipulate this valuable manure as to render it available for a fertilizer.—Therefore our system has been one of constant waste, drawing from the soil a certain amount of plant food almost to the extent of the entire food of our population, and then practically throwing it away. In the Dry Earth system this fact is regarded, and the fertilizing constituents of the flesh and vegetables we eat, after playing their part in the human economy, are conveniently and inoffensively preserved for the use of the farmer and gardener. Then, too, the incorporation with the earth takes place while all is fresh, preserving not only the best properties of the excrement, but also the urine, which principally, by reason of the large quantity of ammonia it furnishes, is a valuable consideration.

The cut above is a representation of the mechanical parts, as sold for constructing an Earth Closet, or for applying to an out-door privy.

Commodos, as represented in cut, being a porta-

ble Earth Closet, which may be kept in use in any room in the house, and are invaluable for the sick chamber, are also sold.

Many prominent Marylanders, both in city and country have adopted the system, and testify to its merits, and we look to its universally superseding the common privy in course of time. See advertisement on another page.

The Correct Length of Whiffle-Trees.

A horse cannot draw as well with a whiffle-tree twelve feet long as with one two feet six inches in length, because the line of draught is not in the proper direction to be most effective. Nor can two horses, harnessed abreast, draw well with whiffle-trees ten feet long, while their heads are coupled close together, because they must travel sidewise, more or less, in which position no animal can exert all his strength to the best advantage in hauling a load.

Horses draw best with the double whiffle-tree just long enough to allow them to stand close to each other, having the single whiffle-trees attached directly behind them, and just long enough to meet in the middle. When the double-tree is very long, each horse must draw more or less sidewise, if the coupling-lines and the neck-yoke are not made long enough to allow them to move directly forward, without having their heads turned toward each other. In order to determine the correct length of whiffle-trees, let two horses stand side by side, with their sides three inches apart; then measure from the centre of one horse to the other on their backs. This will give the length for a neck-yoke, and the correct length for the double whiffle-tree, between the joints where the single-trees are to be attached. When a neck-yoke is only eighteen inches long, and the double-tree of the proper length, horses will be required to move more or less sidewise. For the same reason, oxen often get in the habit of hauling sidewise, because the yoke is too short. Neither oxen nor horses can travel easily and freely, when their heads are turned toward, and their butts from each other.

Whiffle-trees for plowing should always be as short as they can be made, without bringing the traces against the legs of the team. A very long doubled whiffle-tree tends to make a plow take too wide a furrow-slice. If the clevis be adjusted to take a narrow furrow-slice—when the double-tree is too long—the plow will not run at all satisfactorily.—The horse in the furrow will not be able to walk squarely in his place, because the line of draught is such as to keep crowding his hind feet out of the furrow on the plowed ground. The length of the double whiffle-tree and the neck-yoke for a sleigh should be just as long as the sleigh is wide, from the centre of one runner to the other.—*The Manufacturer and Builder.*

AGRICULTURAL TRUTHS.

1. All lands on which clover or the grasses are grown, must either have lime in them naturally, or that mineral must be artificially supplied. It matters but little whether it be supplied in the form of stone lime, oyster lime, or marl.

2. All permanent improvement of lands must look to lime as its bases.

3. Lands which have been long in culture, will be benefited by the application of phosphate of lime, and it is unimportant whether the deficiency be supplied in the form of bone-dust, guano, native phosphate, oyster-shell lime or marl—if the lands need lime alone.

4. No lands can be preserved in a high state of fertility, unless clover and the grasses are cultivated in the course of rotation.

5. Mold is indispensable in every soil, and a healthy supply can alone be preserved through the cultivation of clover, and the grasses, the turning in of green crops, or by the application of composts rich in the elements of the mold.

6. All highly concentrated animal manures are increased in value, and their benefits prolonged by a mixture with plaster, salt, or with pulverized charcoal.

7. Deep plowing greatly improves the productive powers of every variety of soil that is not wet.

8. Subsoiling sound land, that is, land that is not wet, is also eminently conducive to increased production.

9. All wet land should be drained.

10. All grain crops should be harvested before the grain is thoroughly ripe.

11. Clover, as well as the grasses intended for hay, should be mowed when in bloom.

12. Sandy lands can be most effectually improved by clay. When such lands require liming or marling, the lime or marl is most beneficially supplied when made into compost with clay. In slaking lime, salt lime is better than water.

13. The chopping or grinding of grain to be fed to stock operates as a saving of at least twenty-five per cent.

14. Draining of wet lands and marshes, adds to their value, by making them to produce more, and by improving the health of neighborhoods.

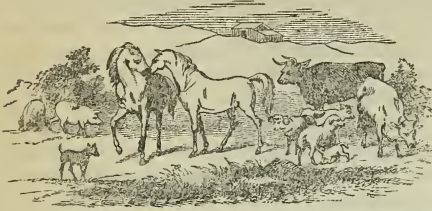
15. To manure or lime wet lands is to throw manure, lime and labor away.

16. Shallow plowing operates to impoverish the soil while it decreases production.

17. By stabling and shedding stock through the winter a saving of one-fourth of the food may be effected.—*Cor. Western Rural.*

CORRECTION.—On the title page of the present number of the *Farmer*, the printer in changing the date made it read APRIL instead of JUNE. A part of the edition only was issued with the error.

Livestock Register.



WASHING SHEEP.

The wool growers of Vermont have been discussing this subject of late in their farmers' clubs.—From the reports that reach us of these discussions, it would seem that the general sentiment is setting strongly against the practice of annually ducking sheep and men in the cold spring water of our running streams. We rejoice that such is the case.—To be sure sheep farmers will be obliged to take up with a somewhat smaller price for their wool, if they discontinue entirely the custom of washing their sheep. Buyers even now make a great ado over purchasing a lot of wool that has not been washed. At the same time not one in twenty of these buyers is sharp enough, or careful enough to distinguish between a lot that is poorly washed and one that is well washed. One lot brings as high a price as the other, if the buyer can only be assured that the sheep have been through a creek or tub of water, no matter how slow or how hasty was their passage. Washing sheep as now practiced is a farce, as far as cleansing the wool of dirt is concerned.—It may carry off some of the oil from the wool; but oil in the wool is not so strongly objected to by the manufacturer as is the dirt.

Let the practice of cold water washing of sheep be dispensed with entirely, and both producer and manufacturer will be profited thereby. The man who thoroughly washes his sheep will no longer find cause for complaint, because his neighbor, who merely goes through the forms, receives as high a price for dirty as he for clean wool. The manufacturer too will be a gainer. He will know the precise character of the article he is dealing in.

But an advantage to be derived from the abolition of this practice, greater than any mentioned above, is that which will result to the sheep farmer in the better health of his flock and of himself.—The process of washing is an unnatural one for sheep. Experienced shepherds estimate the damage to their flocks from this practice at half a dollar a head. Sheep that are not washed in the spring uniformly come up in the fall looking better than those

that have been washed. The colds taken by the flocks, during and after washing, and which often result so injurious to their health and strength, are too frequently shared by the farmer. The exposure to which he is subjected while performing the operation of washing sheep must necessarily be a prolific source of colds, fevers and rheumatisms. The disagreeable and deleterious character of this exposure can be appreciated only by those who have experienced it. Not one of these, we believe, but would rejoice at the universal discontinuance of the custom of washing sheep.—*Utica Herald.*

CARE OF HORSES.

The *London Horse Book* says: All horses must not be fed in the same proportions, without regard to their ages, their constitutions, and their work; because the impropriety of such a practice is self-evident. Yet it is constantly done, and is the basis of diseases of every kind.

Never use bad hay on account of its cheapness, because there is no proper nourishment in it.

Damaged corn is exceedingly injurious, because it brings on inflammation of the bowels and skin diseases.

Chaff is better for old horses than hay, because they can chew and digest it better.

Mix chaff with corn or beans, and do not give the latter alone, because it makes the horse chew his food more and digest it better.

Hay or grass alone will not support a horse under hard work, because there is not sufficient nutritive body in either.

When a horse is worked hard its food should chiefly be oats—if not worked hard its food should chiefly be hay—because oats supply more nourishment and flesh-making material than any other kind of food; hay not so much.

For a saddle or coach horse, half a peck of sound oats and eighteen pounds of good hay are sufficient. If the hay is not good, add a quarter of a peck more oats. A horse which works harder may have rather more of each; one that works little should have less.

Rack feeding is wasteful. The better plan is to feed with chopped hay, from a manger, because the food is not then thrown about, and is more easily chewed and digested.

Sprinkle the hay with water that has salt dissolved in it, because it is pleasing to the animal's taste, and more easily digested. A teaspoonful of salt in a bucket of water is sufficient.

Oats should be bruised for an old horse, but not for a young one, because the former, through age and defective teeth, cannot chew them properly; the young horse can do so, and they are thus properly mixed with the saliva and turned into wholesome nutriment.—*Turf, Field and Farm.*

WHEN TO CASTRATE COLTS.—Many persons hold to the opinion that cold weather is the most suitable time to castrate colts. Having been engaged in this kind of business for six or seven years, my experience and observation is that May and September are the most suitable times. In May there are no flies or other insects to torment a colt; and also, the weather not being hot, the animal does not resort to the shade. Consequently, keeping out in the open field it naturally will pick grass and keep up its flesh and strength, and being kept in moderate exercise, a colt will swell less than if it remains too much of the time stationary under shade.

The same reason applies to September. If done in cold weather, the animal will be apt to be kept housed, which should never be done if it can be avoided. I consider gentle out-door exercise preferable. I have operated on many hundred colts, both horses and mules, and have never yet met with a serious accident or loss.—*Cor. Cincinnati Gazette.*

TICKS ON SHEEP.—Mr. Curtis, of Saratoga, an experienced stock grower, gives the following directions in the *Country Gentleman*: "To destroy ticks on sheep, I open the wool in circles around the body, four or five of them, and sift in snuff, forming a complete girdle around the animal. In winter this is the best remedy. In summer dip them in tobacco juice, or diluted carbolic acid—lambs and all." The same remedy has been recommended by many others. One writer says that a pound of dry Scotch snuff should be applied to every twenty sheep, as near the skin as possible.

RETENTION OF THE AFTERMATH.—N. Noblee gives the readers of the *Country Gentleman* the following remedy:

This is one of those cases that need attending to at the right time, for after it has remained ten days, not all the compound doses that X. Y. Z. can pour down a cow's throat can remove the difficulty. As soon as the cow has dropped her calf, or before if she has any difficulty, give her a pail of warm slop made thick with wheat or rye bran—put in a tablespoonful, (about level full) of gunpowder. If it does not do the work in two hours, repeat it. I have given it in a great many cases and never have known it to fail—hardly ever had to give the second dose.

SELECTING CALVES FOR MILKERS.—A writer in one of our exchanges says: "The points that indicate the good cow are discernible in the calf, and why not? This may stagger some dairymen, but that is just what we wish to do. This wholesale slaughtering of calves in the spring is wrong. A calf will show a good milk-mirror, as well as a cow, and a rich, cream-colored udder as well as a cow, a healthy, thrifty look and strong loin as well as a cow. And these points make up the cow every time. Let the breed be what it may, this is our experience in the matter. A calf that is worth ten or fifteen dollars should not be killed for its mere hide, for the lack of judgment in selecting."

USEFUL RECIPES.

LICE ON CATTLE OR HORSES, are usually soon destroyed by using any one of the following articles: An ointment of sulphur or of snuff, rubbed along the back and neck a few times, once in two or three days—or a decoction of tobacco—or a small quantity of coal oil or benzine applied to the same parts. The first application generally destroys the lice, but the nits hatch out for several days afterwards, and in turn the young lice have to be killed; for this reason several applications are required. A decoction of tobacco or the snuff ointment, will do no harm if applied as above directed. If coal oil or benzine are too freely applied they sometimes remove the hair.—*Cor. Country Gentleman.*

BLOODY URINE.—Having found by experience the value of the following remedy, and being desirous of benefiting others with it, I send it to you. In the spring of 1867 I had a very valuable cow taken with bloody urine. She was sick with it three months, and kept growing worse and got so low that she did not eat, and the day that I gave her the medicine I thought she could not possibly live until the next morning. I tried everything that I knew or heard of and received no benefit from them. A friend advised me to give her the following: "One tablespoonful of nitric acid in one quart of water, every other day, until I gave her three doses." I did so and it cured her entirely. I kept her until the winter of 1869, and saw no signs of the disease during the time. I think it might be better for the creature's throat to give some kind of oil after giving the acid. I did not do it for I thought the cow would die any way.—*Cor. Maine Farmer.*

FOOT-ROT IN CATTLE.—A correspondent furnishes the *Mirror and Farmer*, Manchester, N. H., the following remedy for this disease:—Put them in a place where you can handle their feet, and then take half a pint of common tar and as much soft soap, put them into any vessel, and heat them together until they get thoroughly mixed; then let it cool down some, but not too much; put it on the parts affected quite hot, and in seven cases out of ten it will effect a cure, but if it does not, repeat the soap and tar, which will be sufficient to cure any case that I ever saw in a few days. This is not guess-work, but knowledge.

BRUISE OR GRAVEL.—Is quickly cured by cutting away the hoof a little where the gravel went in. Then take a crooked awl and get out the dirt as much as possible; work gunpowder into the cavity with the back of the awl and touch it with a hot iron; by putting the powder in two or three times in this way it will clean all the gravel and dirt out. Then melt one part tallow and three parts resin and pour into the cavity, and the horse is fit for business.

FOR COLIC, SUPPOSED BOTS, &c.—Slightly scarify the inside of the upper lip of the horse, next the gums, and rub the place well with fine salt. It is said to afford relief in a short time.

FOR A HORSE CHOKED WITH FODDER.—Pour a quantity of water into the ear of the animal, which will cause him to shake his head violently, and the obstruction will be speedily dislodged; if necessary, repeat the operation, but the first dose will generally suffice.—*Cor. Rural New Yorker.*

Says an exchange: If farmers would go to the coal pits and get all the rejected coal and break it up, and keep a supply where the hogs could have free access to it they would have very few sick ones. It is from this part that sulphuric acid is made, hence its medicinal properties.

Good examples amongst the rulers are the best laws they can enact.

The Dinner Party Stake of 1870.

The *Turf, Field and Farm*, in a recent issue, wants to know what Baltimore is doing in regard to a racecourse?

The races come off next fall, and thus far we have not learned of the organizing of a Jockey Club, though preliminary steps were taken in October last to that end. Can the friends of the turf give any information as to the measures being taken to perfect arrangements for the Dinner Party Stake of 1870? The editor says:

What is Baltimore doing in regard to a racecourse? Nearly two years ago a party of gentlemen met at Saratoga, among whom was the present Governor of Maryland, and determined to do all in their power to make Baltimore a racing centre. A Dinner Party Stake, a dash of two miles for the foals of 1867, \$1,000 entrance, half forfeit, was opened, the race to be run in the Fall of 1870. This stake closed with twenty-nine entries, making it one of the richest ever contended for in this country. The entries are from all parts of America, and great interest is felt in the forthcoming struggle. Other stakes were opened for Baltimore in connection with the Dinner Party Stake, and all closed with strong entries. Never were brighter prospects presented for a meeting than for the one planned to take place in Baltimore this Fall. The people of that city have had nearly two years to prepare for the races, and yet what have they done? Unless we are wrongly advised, they have frittered the time away in jealous wrangles, and have accomplished little or nothing. Such folly is incomprehensible to us. The delay in organizing a Jockey Club but jeopardizes their chances for success. Never was a more golden opportunity presented, and yet they have neglected to take advantage of it. Do the leading citizens of Baltimore understand what will be the result of their apathy and indecision? A racecourse opened under the flattering auspices in store, would bring thousands of dollars to the city. From all parts of the country the people would come to attend the races, and these people; during their stay in the Monumental City, would spend money with prodigal liberality. In addition to this, with Baltimore made a racing centre, breeding would be stimulated, stock enterprises would be multiplied, and the wealth of the State of Maryland be largely increased. Let the people of Baltimore think of this, and then go earnestly to work. If it is intended to hold a meeting in the chief city of Maryland this Fall, it is time the club were organized and the programme published to the world.

After the above was in type, we clipped from the Baltimore *Sun*, about the middle of May, the following in relation to the organization of a Jockey Club:

THE MARYLAND JOCKEY CLUB.—During the past week measures were taken by several prominent citizens to organize a jockey club in this State with the above title, and every indication points to the most complete success. The purpose avowed is to restore the sports of the turf, void of all the objections that clung to them in the past, and to have such trials of speed as will bring the finest native and foreign bred stock to our city, directly aiding the highest development of the horse with acceptable exhibitions of horsemanship. The terms of membership are a fee of twenty-five dollars, and twenty-five dollars for each meeting—not to exceed two a year—fifty dollars to be paid as

soon as the club is organized, which will include the membership fee and dues for the first meeting. The list is headed by the names of Governor Bowie, President of the Agricultural Society, and other leading citizens. The trials of speed will take place over the grounds of the Agricultural Society. The first trial will occur about the middle of October, and it promises to be not only a magnificent display of racing qualities, but the greatest horse fair ever held south of New York. The organization of the club will take place as soon as the lists are filled, when officers will be elected, rules adopted, and complete organization secured. After the organization new members will be admitted only in such a way as the rules of the club may designate. Membership will secure special privileges to the members and their families during the week of the exhibitions. It will be remembered that the breakfast party stakes and the dinner party stakes to be competed for this year in Maryland were determined on in New York in 1868, and that Belmont's stable, Jerome's stable, with other entries reaching nearly thirty, were pledged, assuring the best and largest gathering of the highest grade of stock that the country can present.

JORDAN'S SPRINGS.

We call attention to the advertisement of this popular Summer Resort, which will be opened to visitors on the 1st of June. These Springs are beautifully located in Frederick County, Virginia, situated but a short distance from the railroad, and visited by many of our Baltimore people, with whom it is a favorite resort. It was our pleasure to spend a short time at these Springs during the last season, and can testify to the efforts of Mr. Jordan to give satisfaction to his visitors. He is a gentleman eminently qualified for the conducting of such an establishment, and we commend the "Jordan" to all who desire to seek health or pleasure during the coming season of recreation. It will be found that "Jordan is not a hard road to travel."

From the *Charlestown Free Press*, conducted by the veteran editor, GALLAHER, we clip the following. It was our pleasure to meet our venerable friend at the "Jordan" last season, to whom we are indebted for much interesting information as to various localities, particularly the mountains surrounding Winchester. He says:

"A letter dated at Jordan's last week speaks in glowing terms of the prospect for a successful season, and says the establishment was never in better condition for the comfortable entertainment of guests. In addition to the supplies of the most delicious honey from the Apiary of Mr. Jordan—one of the most extensive in the Valley—he has the promise of a most bountiful yield of peaches and other fruits, and vegetables in great abundance and of the finest quality. The writer says Mr. Jordan's strawberry beds contain twenty varieties, and will yield bushels of the most delicious berries in June and July. His garden, orchard and apiary present tempting inducements to those seeking a summer resort, to say nothing of the health-giving waters, pleasant promenades, fine music and agreeable surroundings of the guests of Jordan's."

ÆTNA MOWER AND REAPER.—A. G. Mott, 40 Ensor street, Baltimore, again offers for the present harvest season, this popular machine, which has given satisfaction to all who have used them. He is also agent for the American Tender. See the advertisement.

DON'T BE HUMBLED with the foolish idea that Catarrh cannot be cured! The world moves, and medical science is progressive. The proprietor of Dr. Sage's Catarrh Remedy will pay \$500 reward for a case of Catarrh which he cannot cure. Sold by druggists at fifty cents, and each package makes a full pint of the medicine ready for use. Can get it by mail for sixty cents from Dr. E. V. Pierce, Buffalo, N. Y.

For Coughs, use Dr. Pierce's Alt. Ext. or Golden Medical Discovery.

Grape Culture.

THE VINE DISEASE IN AMERICA.

Vine culture receives much attention in America, and this branch of industry is gradually extending. There is one drawback, however. The vines are subject to disease, and in the older vineyards the crops fail so frequently as to discourage those engaged in the business. The season of 1869 especially was unfruitful. The pestilence peculiar to the grape did its work with fatal effect, and the bright visions of the horticulturist were cruelly dispelled. In Europe they have decided that the worst vine disease is a little mushroom, a vegetable parasite, which fastens to and grows upon the surfaces of the different parts of the grape vine. It is called *Oidium*, and to the naked eye appears only as a fine whitish dust, covering portions of the leaves, buds, stalks and fruit. When this dust settles upon the green leaves, the vine withers as if attacked by a species of leprosy. William J. Flagg, a practical vine grower, and well-known writer on the subject, studied the disease very carefully last season, and through the aid of the Harpers, he has given us a small treatise detailing his experiences in the vineyard and expressing his views on the question. He does not call the vine disease, as it is known in America, *Oidium*, but gives to it the name it commonly goes by—*mildew*. He claims that the oidium of Europe and the mildew of America are so nearly the same that one method of treatment is applicable to both. In this the two are alike: "Each comes in the form of a fine whitish dust, which afterward turns grayish, and then brown or black—each appears at the same epochs and returns after the same intervals—each acts in the same manner on the young berries—each flourishes best in the same state of weather, namely, a season of heat following a season of wet, while a long dry term is equally unpropitious to the progress of each. Finally, each is effectually destroyed by sulphur, which is the only practical point." Mr. Flagg states that the American mind has become much confused through the habit of calling many of the consequences of mildew by the common name of *rot*. The black rot is a serious infliction, but it must not be confounded with mildew. It is the result of bad drainage, or bad ventilation, or both, in connection with peculiar conditions of the weather. It has many of the characteristics of mildew, but the close observer will not readily mistake the one for the other. The remedy for black rot is drainage, and also ventilation. The gray or brown rot is distinct from the black; it is simply a consequence of the attacks of mildew, which come after

the berry is more than half grown. Therefore, by curing mildew we prevent gray rot. Mr. Flagg is an advocate of the sulphur cure. He claims that sulphur judiciously applied to the affected vines will kill the parasites and top the ravages of mildew. Many experiments with sulphur in this country have failed because those who made them did not distinguish between black rot on the one hand, and the gray rot and other decay, consequent on the attacks of mildew, on the other hand. As the two are widely different in origin and character of destructive power, the medicine which is the salvation of one is the poison of the other. Attenuations of sulphur, in which the power of the drug is weakened in being compounded with inefficacious substances—bad tools to work with and ignorance of the rules to follow in the practice of sulphur cure—are the main causes of the failure of the treatment which has proved so successful in Europe, and which Mr. Flagg recommends for this country.—Our people are not patient enough. They are not content with what they have, but constantly run after new bubbles. They have farmed as they have cultivated grapes, loosely and carelessly, depending upon the richness of soil and the healthfulness of climate to make amends for their own shiftlessness and neglect. But we are growing more wedded to home and are now learning to economize the resources of nature. Instead of improvidently exhausting the richness of a farm, and then seeking a new home in virgin soil to repeat the process, we are prudent with first possessions. We farm in the light of science, and by industry and economy preserve the fruit-bearing elements of the land. What we have learned in agriculture, we also must learn in horticulture. "Newly planted vines," says Mr. Flagg, "and new varieties will, for a limited time, do well anywhere, and notwithstanding neglect and ill usage. Hence, we from time to time hear of the wonderful productiveness of freshly discovered grape districts, and especially of their immunity from disease. And doubtless the glowing accounts which come from one and another of the new fields of operation, are to some degree founded in reason. We shall for a long time, I hope, continue to hear of discoveries of more propitious soils and more valuable grape plants. But whoever hopes by traveling ever so far, or by hybridizing ever so industriously, to escape from the ordinary conditions of labor and vigilance to which all kinds of cultivation of the products of the earth are subjected by universal law, will find himself mistaken. Undrained soils will sooner or later breed the black rot, greedy pruning will sooner or later exhaust the best vineyards, and the spores of mildew ever present in the atmosphere, will in their own good time find out the vines they so much love to inflict." To

cure an evil, we must study the form of disease.—Select the remedy in the light of scientific and practical truth, and then faithfully administer it. Sulphur does not hurt the foliage; on the contrary, sulphur is stimulating, and the effect on the sickly vine is regarded as beneficial. Too much of the drug, however should not be applied. Sulphur also has power to destroy or chase away insects.—Mr. Flagg believes in the remedy. He has studied the disease in Europe, and has carefully experimented in his own vineyard on the hills of the Ohio. Therefore his opinions are not without weight.—Vine culture is an important branch of industry in this country, and if Mr. Flagg is able to remove the embarrassments that surround it, to rouse sinking courage, he will be deserving of the gratitude of the nation.—*Turf, Field and Farm.*

LOOK TO YOUR GRAPES.—Burning of the odds and ends of tobacco, to be obtained at some stores and at all tobacconists, for two or three cents per pound, is the best thing to smoke out all the early vermin from the graperies; and just now is a delicate time to watch the vines to see that they are free from these enemies. The smoking, however, should be done without regard to their presence. It is a protection. No one who knows anything about raising grapes under glass, will water the vines while they are blossoming. But when this is fully over the large syringe should thoroughly sprinkle everything inside, including vines, soil, glass, &c., twice or thrice a-day. This must be accompanied with powdered sulphur, placed in the vicinity of every river as a protection against mildew; and should mildew unfortunately make its appearance, the vines themselves should be sprinkled with it.

Just now the out-door grapes are liable to suffer from the steel-blue bug, which feeds upon the blossom, and leaves behind its progeny, the small brown maggot that feeds ravenously upon the leaves, and seriously damaging whatever of the crop left by the bug. A solution of whale-oil soap and water is sudden death to them; but the larvæ is difficult to get at, and the best way to destroy them is to go over the vines and use the thumb and finger. Last year there were very few and they did but little damage, and there may be no damage from them this year, but the vines should be carefully gone over—and not an hour should be lost in doing so.—*Germanstown Telegraph.*

LABOR SAVING.—Farmers, look to your interests as men in other vocations do. It will pay. The hard work of the hay harvest will soon be upon you, and if you have not already provided yourself with that valuable labor saving machine, the *Horse Power Hay Pitcher*, do not delay it for another season. The most economical farmers of N. E., N. Y. and Pa., say that they cannot afford to do without this machine, if they had to buy one annually.—See advertisement of the agent, in our advertising columns.

The Guano from Guanape Island.

The guano of the Chincha island being exhausted or nearly so, says the *Carolina Farmer*, the Peruvian government is now engaged with a large force of Coolies in digging out for exportation the guano of Guanape, which is a small island scarcely 2 miles in diameter, situated 400 miles Northeast of the Chincha Island. Hundreds of vessels find employment in transporting this guano to different parts of the civilized world. Recently the ship *Elliot Richie*, freighted with this article for Baltimore, becoming disabled, put into Charleston, S. C., where her cargo was sold. Two analyses of specimens from different parts of this cargo, were made by Professor Charles U. Shepard Jr., State Inspector of Fertilizers for South Carolina, and published in the May number of the *Rural Carolinian*. In both specimens more than 10 per cent. of Ammonia was found, about 15 to 16 per cent. of Phosphoric acid and from 32 to 35 per cent. of Bone Phosphate of Lime, from which it appears to be nearly equal to the old standard Peruvian Guano. Steps are being taken to import this article directly to Charleston, where there is not only a demand for it by planters, but also by the various establishments engaged in manufacturing the ammoniated fertilizers for the use of the agricultural community. The Charleston basin supplies the phosphatic base of these manures in unlimited quantities, but commerce must be looked to for a supply of sulphuric acid, and for the nitrogenous elements. And no way of supplying the last so cheaply and effectively has been discovered as the use of the old standard Peruvian Guano.

MOWING AND REAPING MACHINES.—A correspondent of the *Country Gentleman*, referring to these machines, holds these views:—"The direct draft of a good machine, working under the most favorable circumstances, as shown by the trial of the State Agricultural Society, is less than 300 pounds, but those favorable conditions are not always to be obtained, so that the draft must many times be much heavier. The machine having the lightest draft at a trial may not be the best machine for practical use; it may not have sufficient power to work under less favorable circumstances. The power of a machine to cut, other things being equal, depends upon the hold the wheels have upon the ground. When the second and third causes combined are sufficient to overcome the hold the wheels have, they slide, the knife stops, the machine is clogged. The heavier the machine, the less likely this is to occur; putting a heavy driver on the seat will sometimes carry a machine through, when with a lighter one it would clog."

BONNER, of the *New York Ledger*, not wishing to imperil the health of his valuable horses, has had the lead water pipes removed from his stables and replaced with Tin-Lined Lead Pipe.

THE CORN GRUB.

The corn crop has several formidable enemies to contend with, and among them is the grub, which sometimes literally destroys whole fields, or damages the crop seriously. One of the best and most convenient remedies—perhaps the very best ever suggested—is the application of *salt* as soon as the plant makes its appearance above ground, prepared and used in this way: Take one part common salt and three parts plaster or gypsum, and apply about a tablespoonful *around* each hill. It will be found to be a sure protection. The mixture should not come in contact with the young plants, as it may destroy them. This method has been tried over and over again by some of the best farmers of Pennsylvania, Delaware and Jersey, and when properly applied has never failed to be perfectly successful. We hope our farmers, who have reason to fear the depredations of the grub, the present season, will try this mixture, leaving a few alternate rows of corn without the salt, and communicate to us the result.—*Germanstown Telegraph*.

THE RUTA BAGA CROP.—Some of our best farmers annually put in an acre or two of Ruta Bagas and thus lay up for winter a supply of good succulent food that comes into use when they are obliged, in a great measure, to depend upon dry food only.—When the bagas are chopped up and sprinkled with a little corn meal or bran, they are eaten eagerly by cows and steers, and are not only fattening and milk producing but extremely wholesome. They are raised as easily as a crop of ordinary turnips in drills. The ground must be well-prepared and manured deeply, the rows struck about thirty inches apart and the seed drilled in.

When up two or three inches the plant should be thinned out, removing the weakest, to four or five inches apart, and thoroughly cleared of weeds. The cultivator should be passed through once or twice carefully. In three or four weeks more another thinning out should take place allowing the plants to stand from eight to ten inches apart. The hoe should be freely used between the plants and the cultivator between the rows. Frequent stirring of the ground is indispensable in the production of a large crop. They are not removed from the ground before November. We have known eight hundred bushels to be raised to the acre and have *heard* of twelve hundred.

The seed should be put in the ground from the 15th to the 28th June. A sod broken up the previous autumn is perhaps the best for this crop.—*Germanstown Telegraph*.

No statutory that the rich man ever placed in his window is to be compared with the little expectant face pressed against the window pane, watching for "papa," when his day's labor is done.

SAVE YOUR PLANTS FROM INSECTS.—Dr. Bright, furnishes the *Farmer's Home Journal* with the following useful and simple directions for protecting flowers, plants, &c., from the ravages of insects:

"Pour a small tumblerful of Phenic acid into a pail of water, and with a fine sprinkler, sprinkle your plants and the ground around them two or three evenings in succession, and every bug, ant and worm will be exterminated, and your plants and vines will grow apace. Try it. This acid is cheap, and can be had at any of the drug stores."

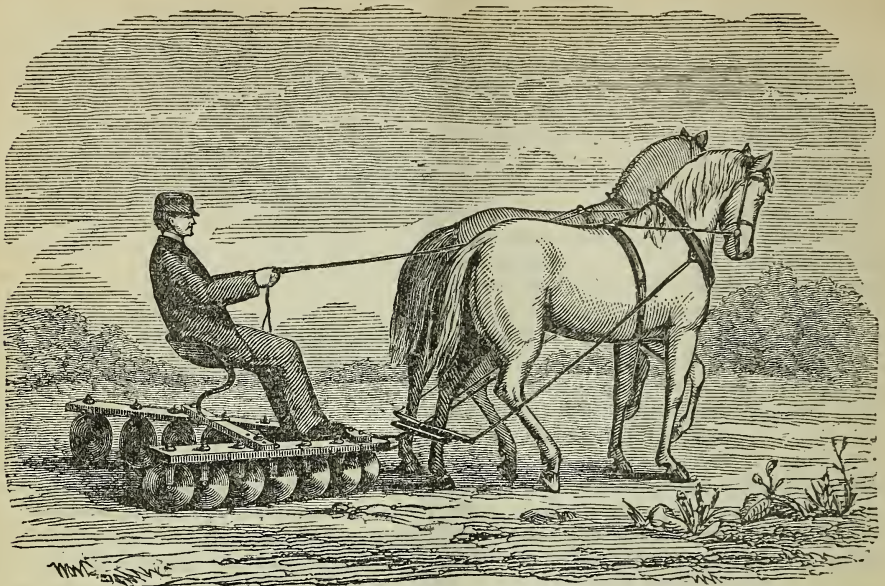
PEACH TREES INJURED BY WORMS.—A correspondent of the *Farmer's Home Journal*, gives the following simple remedy for the attack of worms on peach trees:

"After the peaches were some weeks old, last Spring, I noticed that one of my best trees was dying by worms; the leaves were crisping and withering. I saw that the signs were destructive, and proceeded as follows: About half-bushel of coal ashes around the tree, and then one bucket of water. In a few days the tree revived and bore fine fruit. The past winter I had the ashes put around all of my trees. [Wood ashes would have been better.—*Eds. Farmer*.]

SALT WITH HAY.—A correspondent in the *Germanstown Telegraph*, says: It is a current opinion among farmers that salt preserves hay, and that two quarts are sufficient to cure a ton. Salt in small quantities is septic rather than preservative, hence a seeming paradox. Salt may improve spoiled hay and cause it to be better relished by stock, but well-cured hay requires no salt, and does not pay for the trouble and delay in the hurry of getting in well-dried hay. Curing hay in the cock is much the best plan for the farmer's own use; but for market, dash it in with a rush, bright and dry.

R. H. ALLEN & Co.—This firm is one of the oldest and largest houses in the country for the manufacture and sale of Agricultural Implements and Machinery. The farmer, planter and the trade can be supplied with everything needed in their line, from the small rake to the huge threshing machine, and on satisfactory terms. Their illustrated catalogue is one of the most complete ever issued in this country. Address R. H. Allen & Co., 189 and 191 Water Street, New York. See advertisement on cover.

VARNISH FOR COARSE WORK.—A cheap but good varnish for coarse work can be made in the following manner: Take of raw linseed oil 30 pounds, litharge 1 pound, and white vitrol half a pound; boil them together until the water is all evaporated. This is very durable, and cost but little trouble to make.



NISHWITZ'S PULVERIZING HARROW.

This harrow is constructed on an entirely new principle, consisting of a series of polished, sharp-edged, circular, concave discs, revolving on steel journals, set at such an angle in relation to the line of draft, that they fully pulverize the soil, by cutting, lifting and turning it over in fine, small furrows.—They are secured to the lower side of a frame by means of a bolt passing through a strong iron column. The frame consists of two pieces of wood, hinged together in front, which are secured at any desirable distance apart by means of a cross-bar, bolted across about the centre of the frame. To this cross-bar is attached a comfortable spring seat. For purpose of storing or transportation, the frame can be folded together. It is extremely simple in construction, and not liable to get out of order.

By means of a scraper, against which the concave, circular disc or tooth revolves, it is kept clean or scoured even in the most adhesive Western soils, thus obviating the necessity of steel teeth.

This harrow is manufactured by the Peekskill Plow Works, Peekskill, New York, and sold in Baltimore at \$32.

A DOUBLE PLOW.—English farmers, who could not afford the expense of the steam-plow, have lately been turning their attention to plows drawn by a single team, and managed by one man, but turning over two furrows at a time. There have been two public trials, got up by the farmers of Cumberland, at Whitehaven and Aspatria. No less than a dozen implements were submitted for competition, constructed by several different makers. Nearly all the work was well done, and the success of the double plow was considered as established. The first prize at both trials fell to the lot of Messrs. Howard, of Bedford, for a light and simple implement carried on three wheels.

HOW TO DESTROY THE CURRANT WORM.—A correspondent of the *Oneida Dispatch* says: "To destroy the currant worms, go out at 8 or 9 o'clock in the evening and jar the bushes so as to throw the worms on the ground. Do this three successive evenings when the worms make their appearance. This will finish them for the present year, and if every-body will do it for three successive years it will destroy the race."

SULPHATE OF LIME AS A TOBACCO FERTILIZER.—We are assured by those who have tried it, says the *Tobacco Leaf*, that this fertilizer, commonly known as land-plaster, has a very fine effect on tobacco—increasing its weight and quality but not its surface. It enables it to stand drought much better. A table-spoonful should be put in the bed of the young plant some time before tapping. A Tennessee farmer considers this the cheapest and most valuable of our fertilizers, costing only about \$2.25 per barrel.

The world uses 250,000,000 pounds of tea each year, and 713,000,000 pounds of coffee. China furnishes nearly all of the tea, and Brazil over one-half of the coffee. Only 140,000 pounds of Java and 18,000 pounds of Mocha is produced. The United States consumes nearly one-third of all the coffee produced in the world, and the English people are the greatest tea-drinkers out of China. The Germans take rank next to the Americans as coffee drinkers. The Americans consume about six pounds of coffee and one hundred and twenty-two pounds of beef per head, counting adults and infants each year. This looks large, but then the Yankee nation never do anything by halves.

NEW BOOKS.

How Crops Feed.—A treatise on the Atmosphere and the Soil, as related to the nutrition of Agricultural Plants, with Illustrations. By Samuel W. Johnson, M. D. New York: Orange, Judd & Co. Henry Taylor & Co., Baltimore, Md. \$2.

Professor Johnson, of Yale College, is one of our best agricultural chemists, and for carefulness of analysis and completeness of study on all matters relating to crops, their constituents, and the soils on which they grow, is justly recognized as high authority. This work, the result of his investigations, will command attention, and most deservedly, both at home and abroad. It is learned, is written for the most part in a popular vein, and brings the discoveries of modern agricultural chemists down to the latest period. It should form a part of every farmer's library. To agricultural societies and editors it will be found invaluable.

A Simple Flower Garden for Country Homes. A practical guide for every Lady, &c., &c. By Charles Barnard. Loring, Publisher, Boston, Mass.

The instructions given in this pamphlet, for it is not much more—the entire volume consisting only of 76 pages—are plain and simple. The work in the Flower Garden is taken up month by month for every month in the year, and from time to time lists of the plants best adapted for private gardens are given. Of course in a book of this small size there is a great deal skimmed over that ought to be known, and which must be learned from other sources when any one attempts to reduce the science of flower gardening, even on a small scale, to practical operation. Still, it is a handy book, though superficial, and offers many suggestions that may be found useful.

Harris on the Pig.—Breeding, Rearing, Management and Improvement. By Joseph Harris. Illustrated. New York: Orange, Judd & Co. Henry Taylor & Co., Baltimore, Md. Price \$1.50.

The hog enters into the dietary of so large a class of the population, and constitutes so important an article of provisions for exportation to foreign markets that any treatise on his life, habits, and the best manner of breeding him, the choicest breeds, and their management, cannot be otherwise than useful. Mr. Harris has evidently studied the animal well, and this book upon the subject is not only well and thoroughly written, but is quite as thorough as such a work needs to be. We commend it to the attention of Farmers and Hog Breeders generally.

PORTABLE STOVE AND GAS LIGHT COMPANY.—We refer the reader to the advertisement, in another column, of this company, offering all kinds of vapor Stoves for heating, cooking and mechanical purposes, also Portable Gas Lights, in every convenient, useful and ornamental shape. The stoves sold by this company fulfill all the conditions required of a good, cheap and safe stove and lights. The gas consumed in the lamps sold is non-explosive, and exceedingly cheap—the lamps are gotten up in various styles and are really neat and beautiful. The stoves are just the thing the housekeeper both in country and town, most need for summer cooking. We commend both to our readers. Price for Stoves range from \$6 to \$24—the Lamps from \$3.50 to \$20, according to style and finish. Send for the company's pamphlet, No. 7 S. Gay Street, Baltimore, Md., which will give you all information on the subject.

RECEIVED.

ADDRESS delivered before the New York State Agricultural Society, by Prof. James Law, of Cornell University, Ithaca, N. Y., at Albany, on Wednesday, February 9th, 1870. Subject—"Rational and Irrational Treatment of Animals." This address is replete with much information of importance to stock raisers, as it discusses the treatment of animals and the diseases to which they are subjected in a concise and clear manner. We shall publish extracts from this in a future number.

MEMORIAL OF HERMAN TEN EYCK FOSTER.—Prepared by Hon. A. B. Conger, in accordance with resolution passed by Executive Committee of the New York State Agricultural Society, and presented to the annual meeting February 9th, 1870. Mr. Foster had held many official positions in the Society, ranked among the best farmers of the State, and in the social circle was dearly esteemed by all. He died on the 9th of February, 1869.

MEMORIAL OF BENJAMIN P. JOHNSON.—Read before the New York State Agricultural Society, at the annual meeting, February 10th, 1870. By Marsena R. Patrick, ex-president, and published by the Society.

Col. Johnson was for many years Secretary of the State Society, and ranked high among the agriculturists of his day. He was "Vice-President of the Society in 1841, was its Corresponding Secretary in 1844, its President in 1845, and its working Secretary from January 1847, until he "laid himself down in his last sleep," on the 12th day of April, 1869." His reputation was national and his death mourned as such.

NEW LISTS OF 1500 Newspapers for which G. P. Rowell & Co. of New York, are advertising agents. This is an old and reliable advertising agency.

New Advertisements.

Clement Hill.....	Durham Cattle for Sale.
J. W. & M. Irwin.....	Chester Pigs, Sheep, &c.
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S. W. Picklin.....	Percheron & other Horses.
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S. Bassett French.....	"The Farmers Gazette."
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L. A. Folsom, M. D.....	Spaying Made Easy.
W. D. Mann.....	Mobile Weekly Register.
G. & C. Merriam.....	Webster's Dictionary.
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R. H. Allen & Co.....	Agricultural Implements.
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ard Mfg Co.....	Tin Lined Lead Pipe.
H. N. Peck & Co.....	Berry and Grape Boxes.
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B. T. Welch.....	Indian Aque Cure.
C. B. Rogers.....	Fruit Baskets.
Wm. H. DeCourcy.....	Sheep.
J. Wilkinson.....	Hay and Straw Pitcher.

IMPROVED SUBSTITUTE FOR WASHING-SODA.—It has been found that the hyposulphite of soda, which is now manufactured very cheaply, for the use of photographers, is much better than the common washing-soda to wash delicate objects. It attacks neither the skin of the hands nor the objects to be washed, as does the common soda; and at the same time it is an effective bleaching agent, and takes out many spots better than any other substance.

Ladies Department.

ST. JULIENNE.

A rare and radiant girlish face,
Touched with a tender, saintly grace.

A brow of meekly proud reserve,
Sign of a cross on its patient curve!

Locks of the hue of rich, dead gold,
About her innocent forehead scolloped.

Eyes whose opaline lustre beams,
Pure as a poet's holiest dreams.

Cheek as a polished sea-shell fair,
Sweet lips half laughter and half prayer.

A smile exceeding sweet, and yet
Pained with the pang of some past regret.

A soul that loftily soars and sighs,
Yet leading Self to the sacrifice.

A heart as noble as ever rung,
Its truthfulness out on a truthful tongue;

Silently suffering, brave to endure,
Patiently prayerful, prayerfully pure;

Gifted, glorious, half divine,
A heavenly soul in an earthly shrine.

By women worshipped, adored by men,
Radiant, rare ST. JULIENNE!

XARIFFA, in New Orleans Picayune.

WHO WON?

It was a raw, bitter day, such a day only as can come the last of December to open the fun of the holidays. Yes, the weather was spiteful, malicious, one of those aggravating days when everybody feels forced to be disagreeable to everybody else. The cattle collected in the farm-yard felt the pervading influence. The Brahmas hooked the shorthorns. The shorthorns vented their spite upon the mulies. The mulies, though laboring under natural disadvantages, displayed their vindictiveness on the poor calves, and butted them into the great mudhole in the center of the yard, and when they essayed to escape on the other side, the fierce longhorned oxen most ungallantly lifted them back, so they stood in that slough of despond, and bleated miserably. Their cries now mingling, now drowned by the unearthly squealing of the two hogs, before driven from their snug retreats in field and wood, and now standing and shivering, they made their old haunts resound with plutonic echoes. Discordant notes and sounds resounded on all sides. The day was dark and merciless, but the deed to be enacted upon it was darker and more merciless. The sun had entered his protest upon the occasion by withdrawing behind the brooding clouds. Heaven help all its creatures at such a time, sighed the anxious and timid mistress of the mansion, as she closed her doors to shut out what she might.

Everything within and without wore a half-scared, homeless look. Even the great turkey gobbler, who had strutted forth bravely gobbling his defiance to the gathering crowd, had been put to an inglorious flight by a great yellow dog, and now stood in drooping, silent dejection upon the top of the smoke house.

People came in rapidly from all directions. It was the largest property that had been offered for sale for many a day in that primitive neighborhood. It was to take place ostensi-

bly for a partition of property, but in reality for a different purpose. The crowd fell back right and left as the sheriff came walking up the avenue.

He was a little man, but he stepped firmly, as though treading on heartstrings was an every day affair. The widow's heart gave one sudden bound, with a strong presentiment of coming evil. She rose, laid the rosy little infant (who had never known his father) in his crib. The presentiment took form in one agonizing question. Had she trusted her all, and that of her helpless little ones, and been betrayed? This was no time for delay or inquiry. She felt the hush in the crowd. She heard the clear, loud tones of the sheriff's voice. She gave one glance at the baby, who was sucking his fist with disconsolate fortitude. She opened the door and passed up to the stand, just as the sheriff commenced. "I offer the plantation to rent, on good and approved security," etc. Heard the administrator's brother, as he bid, and saw it knocked down to him. Her heart had bounded with fear, but now stood still at the sickening reality. Oh, heaven! had it come to this. Were she and her babes turned shelterless from their father's house without one moment's warning? A hand was laid on her arm. She looked up and met the snake eye of the administrator, black and twinkling with triumphant malice: "You do not want the place, Aunt Ruth?" he asked in his soft, treacherous voice. It made no difference to him whether she wanted it or not, but appearances must be kept up before the wondering eyes of the public. She did not betray him; she did not slap the dark-witched face so close to hers; she did not utter one reproach; she did not suffer her lips to move. How the rest of the day passed she never knew. She dimly recollected enacting the part of hostess, of seeing thousands of dollars fall into the hands of her husband's greedy kinsman, and all under the sheriff's hammer and the form of law—that coat of mail too often the armor of injustice. She remembered the thrill of remorse and terror at the silvery, happy laughter of her little girl, as she glided hither and thither enjoying the strange scene with childish delight. But night came at last to that long day, and she was—alone with her grief and indignation. Never had gathering darkness been so welcome. In an adjoining room she heard the sheriff and administrator, as they made out the papers and closed up the business of the day, but at length their tones died out. The little prattler in her crib has ceased her wondrous tales of the great day. Ever and anon, in the lulls of the tempest storm without, she heard the loud monotonous sounds that told the tired administrator slept well after that day's deeds. Not he the one to follow too closely the footsteps of his great exemplar. He did not go out and hang himself, but he got himself, to his soft bed and slept soundly, at peace with himself and his work. But how with the victim of his treachery lying prostrate on the hearth in her room? From the moment when she had felt herself alone she had given up to the varying passions that had been restrained by a terrible effort of pride and will.

"Forsaken of God and man!" she muttered. And this the reward for a course of strictest honor and integrity. How proudly she had repulsed their repeated advances to unite with them in defrauding the creditors of the estate, and how, when wearied out with their importunities, she had told them that for all the whole race had or might possess, she would not betray trust, and to their menaces of her interests she had answered that she would trust in God. She had trusted Him, but had he helped her? Her proud heart, full of despair and wicked rebellion, needed no words to speak its answer. Memory played like lightning with the sunny hours of her past life. The carefully taught child of a pious mother, she could not recall the time when great moral

lessons were not as familiar as the songs of her childhood. As she had grown up, caresses and kindness had been showered upon her. One short year ago, and those who now insulted and wronged her had fawned around her with honeyed words of flattery, and he who had never opened his lips but in blessing, whose every accent had been love and kindness, was silent in death. How could he lie so still and yet so near that might the dead hear that days work, were all known to him. No, he had left those he so loved and cherished with only his unfilled promises and the torturing legacy of his grasping kinsmen. How they had gathered around her in the first hours of her grief, with condolence and sympathy. How kindly they had offered to relieve her of the care and burden of her business, until neglecting the half uttered warning from dying lips she had trusted them—and then for the rest she had no words—only feelings, and now nothing was left her but to die, she and her babes. What had life left for them? Go with her revenge, despair and rebellion; the tempest without was nothing to the tempest within. Suddenly with loud creaking and groaning, the great doors swung open. The wind rushed furiously in, blowing out the light and whirling the ashes round the hearth. Had the dead listened to her upbraidings and broken the chains of death? Timid she had always been, but now she walked unhesitatingly to the door and out into the darkness. She feared neither the dead nor the living—only life. She slowly closed and bolted the heavy doors, but as she turned, the dimpled arms of the baby, rosy in the ruddy light of the reviving embers, were tossed up, and with a smile on his half-opened lips, he sank back to rest. She gazed long and anxiously at the beautiful picture, and as she looked she shrank more and more from herself. The actors and deeds of the day were forgotten, and she looked aghast into the stirred depths of her own heart.

She might have lived and died, and never known herself, but for the trials and temptations of that day. The old family clock now chimed the hour of four. Oh, that ever to be remembered night! The little sleeper in the crib, who had all night long been acting over the scenes of the day in her dreams, now murmured brokenly, "and forgive us trespasses, as we forgive those, lead us not into temptation." She fell on her knees, and, with bitter repentance, confessed the deep wickedness of her heart, and forgave those who had wronged her, and passed out of their thoughts, their ways and lives, and with sweet promises full of hope and trust stealing over her heart, she sank to rest, at peace with God and man.

THE GOLDEN WEDDING IN HEAVEN.

"From youthful hours we two together,
Have lived for fifty years—
Through summer days, thro' winter weather,
Through sunshine and through tears.

Now watching thy sick couch beside,
Still beautiful to me,
I trust whatever may betide
We shall not parted be.

O God, if death be come for her,
Let my strong prayer be heard;
Leave me not here a prisoner
On earth, with hope deferred.

Grant, while her angel wings are spreading,
I be not left alone;
But let us keep our golden wedding
Before thy golden throne!"

* * * * *

Fulfillment to the prayer was given—
In quiet death they lay,
And celebrated in high heaven
Their fiftieth wedding day.

DOMESTIC RECIPES.

CURRENT WINE.—Prepare the currants (which should be perfectly ripe) the same as if you were making jelly. To each quart of juice extracted add two quarts of cold water and three pounds of good brown sugar. Having stirred all well together, let it remain undisturbed till the next day; then skim it and set it in a cool place to ferment. Keep it uncovered, and fill it up every day until done working. In six or eight days, when it has ceased fermenting, cork it closely, adding, if you wish, a little good brandy—a pint to every eight gallons of wine will be sufficient. As soon as it becomes clear it is fit to bottle. It will be fine wine in the course of the winter.

CHERRY WINE.—Stone large red cherries; mash them and mix them with cold water, allowing a gallon to five pounds of cherries. Let it stand ten or twelve hours, then stir it up well and strain it. To each gallon of liquid add three pounds of sugar, and finish the same as currant wine.

RASPBERRY WINE.—Bruise the fruit and strain it through a bag; take the same quantity of boiling water that there is of juice; let it become quite cold, then pour it on the dry strained fruit in the bag, and let it stand for several hours; then strain and mix it with the raspberry juice. To each gallon of the liquid add three pounds of powdered white sugar; keep it in an earthen vessel, close covered, for six days; then turn it into a clean cask; put in the bung, and let it remain about a month. When well settled, bottle it.

BLACKBERRY WINE.—To every gallon of the fruit allow a quart of boiling water; mash the berries; pour the boiling water on them, and stir them up well; cover, and let it stand until the following day. Then, having stirred all again, strain the liquid into the cask, adding good brown sugar in the proportion of two pounds to each gallon; cork it tight. The wine will be ready for use in the course of the autumn.

ANOTHER WAY.—Fill a keg or cask three-fourths full with sound, ripe blackberries; then fill up the cask with molasses, close it tight, and set it in a dry, cool place until the winter. The liquid may then be poured off, and will be found an agreeable common wine, and the berries will make good pies.

NEW JERSEY SHERBET.—Cut out the red part of two or three ripe watermelons, work it with a spoon until it becomes a thick, smooth pulp; thin it with water, sweeten it to your taste with loaf sugar, and add lemon juice or rose water to flavor it; a little white wine is an improvement. When well mixed strain the liquid into a pitcher and set it on ice until wanted; then fill the glasses, and the beverage will be found very agreeable and refreshing.

LEMON SHERBET.—Dry thoroughly by a moderate heat one pound of finely ground white sugar, and quarter of a pound each of tartaric acid and carbonate of soda. Stir all well together, and pass the powder through a dry hair sieve, so that the ingredients will be well mixed; put it into bottles, which must be immediately corked tight, and kept in a dry place. A teaspoonful of the powder added to a glass of lemonade (made without sugar) makes a pleasant and effervescent beverage.

NECTAR CREAM.—One gallon of water, four pounds of white sugar, quarter of a pound of tartaric acid, four table-spoonfuls of flour and the whites of four eggs. Whisk the white of egg, and add it to the water, then beat in the other ingredients, boil the mixture for three minutes, skim it clear, and when cold add an ounce of essence of lemon. Keep the syrup in corked bottles. For use, take one-third portion of syrup to two-thirds of water, and add a little carbonate of soda.

SNOW AND ITS USES,

BY W. A. WOTHERBEE, M. D.

The word snow is of somewhat uncertain origin, but its Danish, Teutonic, Gallic, Saxon, and Gothic synonyms are nearly identical, point to its origin in one of these languages. It is generally defined as water which has been frozen while floating in a state of vapor, or, as a very old lexicon has it, "a meteor well known in northerly and southerly climates, especially beyond the tropics." It is a form of crystallized water, which is exceedingly expanded and mixed with air and other gases, so much so, that sixty cubic inches of compact snow will produce only eight cubic inches of water. In the formation of crystals of snow in the clouds, many gases, as well as organic and mineral bodies, become incorporated with them, so that, instead of water derived from melting snow being used for chemical purposes, as is often the case, it should be avoided. The dazzling whiteness of snow is owing to this great proportion of air diffused among its particles. The flakes of snow vary in size, from more than one inch to seven hundredths of an inch in diameter, and consists in an assemblage of very minute crystals, of a great variety of forms, all of which, however, may be considered as modifications of one or more of five principal classes, viz: 1st. Crystals in the form of very thin, transparent and delicate plates, of which there are not less than twenty-five different modifications, some of which are extremely beautiful; 2nd. Crystals having a spherical nucleus, or the form of a plane, studded with needle-shaped crystals; 3d. Three or six sided prismatic crystals; 4th. Hexagonal pyramids; 5th. Prismatic crystals, having six sided plates at either end, and sometimes in the middle. Some of these forms are very rare, being only occasionally found in the Polar regions. To obtain these crystals for microscopic examination, they should be carefully collected from the snow which has descended during perfect calm, as many of them are so extremely delicate, that the slightest disturbance of the atmosphere would at once mutilate and destroy their exquisite symmetry. One of the longest recognized uses of snow is that of protecting the soil, and the roots and germs of plants imbedded in it, from the extremely rigorous cold of winter, and this property is chiefly due to the fact that, by its being so greatly rarified by its admixture with air and other gases, it thereby becomes a very poor conductor of heat, and thus the warmer temperature of the earth beneath is very slowly conveyed to the colder atmosphere above. As an example of the effect of cold upon the roots of common grass, when not thus protected, we often notice upon

bleak spots from which the wind has blown the snow during the entire winter, that the grass becomes dry, withered and dead, or as it is called, "winter-killed." Hence, a cold winter without snow, or with very little, is not favorable to the soil for the next season, and an early and permanent fall of snow, while the earth is yet comparatively warm, or before the frost has penetrated to any great depth, is a favorable indication for the farmer. Those who are familiar with the cultivation of what are called "winter grains," that is, wheat or rye, which are sown and spring up in the fall, will appreciate the use of snow in covering and protecting the young and tender sprout during the winter. But the benefit of snow to the soil and its productions does not consist solely in protecting them from the cold; the power of absorbing gases exists to a very great degree in this form of water, and especially does it absorb ammonia and carbon from the atmosphere, retaining them until spring, when, by melting, it imparts them to the soil, thus acting in place of a manure. The atmosphere is also purified of these deleterious substances, and man and animals are relieved from their poisonous effects, while they nourish the vegetable kingdom. Ammonia may be readily obtained by evaporating a few pounds of snow with muriatic acid, and then adding hydrate of lime. That which lays next the ground contains a much greater quantity of ammonia than that which forms the surface. Near the sea, minute proportions of chloride of sodium, or common salt, are usually present, and in the vicinity of large towns, and of foundries and various other manufactories, it contains many mineral ingredients, as well as soot and other products of combustion. It frequently holds a considerable amount of organic matter, which may be shown by the conservoid vegetation which is produced by exposure to the light.—*Journal of Applied Chemistry.*

CERTAIN REMEDY FOR ROACHES.—A correspondent in the *Country Gentleman*, says that Borax is an unfailing remedy for roaches: "But, reader, have you ever tried borax? If you have not, why try it.—Borax is too much for them. Yes, that sweet, clean, and harmless white powder, can be scattered fearlessly among the dishes and papers on the shelf and the pots and pans below, and it is so repugnant to them for some reason that they retire from the field. How it affects them is rather uncertain. After taking into consideration the nature of the victorious drug, I should think that it must scorch or burn their tiny feet and cripple them. That it makes the place too warm for them is certain, and I am glad to tell of a remedy so innocent and yet so very effectual. In old houses, especially those containing heaters and hot-water pipes, the housekeeper wages a very unequal war with these annoying pests. Now to the housekeepers of such houses, and all in fact, I would say: go to the druggist and ask for the powdered article, and be not frightened if he charges sixty or seventy cents a pound, for the roaches will disappear before you have used even that much."